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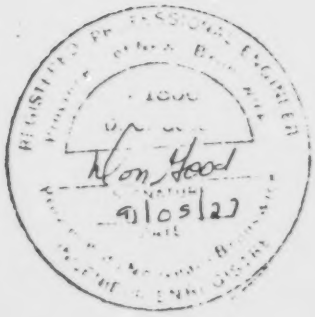
FINAL REPORT

NEW BRUNSWICK-NEW ENGLAND AIR SERVICE STUDY

Submitted To:

New Brunswick Department of Transportation
New Brunswick Department of Tourism, Recreation & Heritage
New Brunswick Department of Commerce and Technology
Regional Development Corporation
Atlantic Canada Opportunities Agency



Submitted By:

Fiander-Good Associates Ltd.

May, 1991

Suite 200, 335 Queen Street,
P.O. Box 207, Fredericton,
New Brunswick E3B 1B1
Phone: (506) 458-8455

FGA FIANDER - GOOD ASSOCIATES LTD

Suite 200 335 Queen Street P.O. Box 207 Fredericton New Brunswick E3B 1B1 Phone (506) 458 8455
Fax (506) 452 2729

FGA FIANDER - GOOD ASSOCIATES LTD.

May 27, 1991 90-0527-36

Mr. Doug Johnson, P.Eng.
Acting Director
Transportation and Communications Policy
Kings Place, 6th Floor, Rm 649
Fredericton, NB
E3B 5H8

RE: NEW BRUNSWICK - NEW ENGLAND
AIR SERVICES STUDY - FINAL REPORT

Dear Mr. Johnson:

Please find enclosed a copy of the final report for the above project. As outlined in the Terms of Reference, this study analyzes current issues regarding air service between New Brunswick and the New England States. The first phase of the study estimates the potential passenger and cargo demand for a new or improved transborder air service. Phase II assesses the quantity of passengers who are currently driving from New Brunswick to Maine to access air service. The potential for fly-drive tourist traffic was examined in Phase III, while the potential economic opportunities generated from new transborder service options were outlined in Phase IV. Finally, a summary of findings is presented along with a listing of recommendations which were derived from the study.

We appreciate having been given the opportunity to participate in this timely study and hope that the findings prove useful in assisting the various Departments involved.

Yours truly,

Don Good

DON GOOD, P.ENG.
VICE-PRESIDENT

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CHAPTER 1.0

INTRODUCTION

1.0 INTRODUCTION

1.1 Background

With the exception of Saint John, air service to the United States from New Brunswick communities can presently only be obtained through Toronto, Montreal or Halifax gateways. Throughout most of the 1980's Saint John enjoyed direct jet air service to Boston provided by Air Canada. In 1987 Air Atlantic took over the route, providing direct scheduled air service between Saint John and Boston, utilizing a deHavilland DASH 8 aircraft. Present schedulings enable same day return service to Saint John traffic, however, timings are such that Boston traffic is not afforded same day return service. Although a couple of other short-lived transborder services have been implemented, the Saint John - Boston link has historically been the sole direct air service between New Brunswick and the United States.

Because of the relatively short distances between some New Brunswick communities and the airports at Presque Isle and Bangor, and the available air service from these airports to other New England areas, as well as the rest of the United States, trips are made annually by road between New Brunswick and the above airports for the purpose of utilizing air service to Boston and destinations beyond. It has been established from previous discussions with travel agents that most trips are made to these airports for "sun destination" excursions during our winter months. There are also some business trips being made in a similar fashion, as a means of reaching both U.S. and Canadian destinations. Efforts are made in this study to more clearly quantify these numbers and to identify the feasibility of improving transborder air service.

Any increase and/or improvement in direct transborder air service can increase economic opportunities for New Brunswick. As a result, the New Brunswick Department of Transportation, in association with the Department of Tourism, Recreation and Heritage, the Department of Commerce and Technology, the Regional Development Corporation, and ACOA commissioned Fiander-Good Associates Ltd. to complete a New Brunswick - New England Air Study. This project has been funded by the Governments of New Brunswick and Canada pursuant to the Cooperation Agreement on Planning.

1.2 Study Purpose and Scope

As stated in the Terms of Reference the purpose of the study was as follows:

> **"The study will analyze current issues regarding air service between New Brunswick and the New England States and will make specific recommendations on how improvements could be implemented.**

Four major areas, in which efforts were directed include: 1). the potential for improving scheduled air service; 2). the level of usage of air services at Maine airports by New Brunswickers; 3). the potential for fly-drive tourist traffic entering New Brunswick; and 4). the direct and "spin-off" economic benefits which would be generated from an improved transborder air service.

Data collection activities have been directed towards obtaining as many secondary data sources as possible, thus minimizing expenditures on primary data collection. A survey of the business community was completed through the cooperation of the Atlantic Chamber of Commerce and New Brunswick Department of Commerce and Technology. Primary data were also collected through interviews with several travel agents throughout New Brunswick and Maine, as well as discussions with various airline officials, government officials and industry representatives.

The geographic study area included all of New Brunswick, that part of Nova Scotia served by the Moncton airport, the area of Quebec served or potentially served by Charlo, Edmundston and St. Leonard, the New England states, and New York City.

CHAPTER 2.0

SUMMARY OF FINDINGS AND RECOMMENDATIONS

2.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

2.1 Findings

Based on the evaluation completed as part of this project the following major findings have been extracted from the main body of the report:

1. The only existing direct transborder air service in New Brunswick is offered between Saint John and Boston by Air Atlantic. Return service is offered twice daily, six days per week, with a single return flight on Saturdays.

2. Recently, Precision Air which is a U.S. regional carrier affiliated with Northeast Airlines, has applied for a license to provide two new services from Boston to New Brunswick. The proposed routes are: 1). Boston - Moncton - Charlottetown, and 2). Boston - Saint John - Fredericton and are to be served with a 19 passenger Metroliner, 2 return flights daily, 6 days per week.

3. The existing New Brunswick transborder market is 51,327 passengers annually (based on 1989 data). Approximately 70 percent of this market is currently utilizing Montreal, Toronto and to some extent Halifax as gateways to the U.S. Saint John Airport generates 49.5 percent of the total transborder market, while Fredericton and Moncton generate 14.8 percent and 34.0 percent, respectively. Northern New Brunswick airports account for the remaining 1.7 percent.

4. Boston is the most popular destination for New Brunswick transborder air travellers, accounting for 42 percent of the total movements. The Florida market represents 29 percent. New York is the third most popular destination representing 9 percent of the transborder volumes.

5. New Brunswick airports (excluding Saint John) do not generate sufficient demand by themselves to support a DASH 8 service based solely on existing transborder volumes. It will be necessary to either divert existing surface trips to the air mode, stimulate new trips using a new or improved transborder air service and/or conduct some type of co-terminal operation. Any new transborder route would have to compete on both a service and cost basis with existing flights primarily over Montreal and Toronto. There

is an opportunity to improve the existing transborder service out of Saint John and thus capture some of the existing market over Montreal and Toronto by providing better connections to Saint John from Moncton and Fredericton.

6. The first quarter of the year represents the period when transborder air demand is at its highest, followed by the second quarter. The third quarter is the least busiest.

7. The 1986 Air Atlantic Study indicated that thirty-five percent of air trips to the United States were business related, 52 percent were vacation related, while the remaining 13 percent were categorized as some "other" purpose.

8. It is estimated that there are approximately 673,310 one-way auto person-trips that are greater than one-day in duration made between the United States and New Brunswick annually. Although this can be considered the overall potential market for diverting trips to a transborder air service, the potential diversion of the business component of these trips would be more realistic.

9. In total, 28,445 one-way auto person-trips are made between the United States and New Brunswick annually for the stated purpose of business. However, this figure does not include business trips between New Brunswick and the State of Maine given that the potential to divert these trips is unlikely. Thus, this is an area where efforts can be directed at diverting surface trips to a new or improved transborder air service.

10. The Chamber of Commerce survey, which was supplemented by a mail-out survey conducted by New Brunswick Department of Commerce and Technology, resulted in those responding indicating they made 937 transborder work related trips to the United States over the last year. Sixty-two percent were by air, while the remainder were by automobile. Seventy-two percent of the business trips inbound from the U.S. (303) were by air. Outbound business trips had an average duration of 4.0 days, while inbound business trips (from the U.S.) had a duration of 2.6 days.

11. The State of Maine was the most popular work trip destination of the survey respondents at 30 percent, followed by New York and Florida at 7 and 5 percent, respectively. Boston is the single most popular destination for inbound work trips at 16 percent, followed by the State of Maine at 28 percent with the New York/New Jersey area at 12 percent.

12. Eighty-one percent of the survey respondents indicated that they would use a new or improved service. Of this total, 60 percent said they would use a new service if it were less expensive and offered better service. Approximately 25 percent felt cost was a determining feature, while 15 percent would use a better service, regardless of cost.

13. Between 1991 and 1998 transborder air trips between New Brunswick and the United States are projected to grow annually at 5.6 percent. Between 1991 and the year 2003, the annual growth rate is projected at 5.0 percent. The total annual transborder air trips can be expected to nearly double by the year 2003.

14. The existing transborder service analysis undertaken found that the vast majority of New Brunswick - U.S. city pairs are presently best served through Montreal or Toronto routings. For the most part, Fredericton currently experiences good outbound transborder service with only a single stop in either Montreal or Toronto. Inbound service from the U.S., however, is often plagued with long delays at the connecting airport. There is poor service between Fredericton and Boston.

15. Saint John is the only community with direct service to Boston. Passengers from Saint John flying over Montreal or Toronto often must stop in Fredericton as well.

16. Transborder service from Moncton is generally similar to that existing in Fredericton. Poor service currently exists from Moncton to Boston.

17. Northern New Brunswick airports presently have transborder service over Montreal and Toronto. There are no convenient connections to Saint John for service to Boston.

18. The best opportunity for improving transborder air service relates to trips generated by Moncton and Fredericton. Northern New Brunswick airports generate less than 1,000 transborder air trips annually and to divert these trips to a new or improved air service would require better and more connections to the southern airports.

19. The fare analysis found that many of the existing fare differentials between air service originating in New Brunswick versus that beginning at a Maine or Boston airport are generally insufficient to support a service from New Brunswick to the New England point. The business and regular economy fare classes presented the fewest opportunities for a cost competitive service, however, the deep discount fare class in many cases offered at least some opportunity to be cost competitive. In general, the opportunities to provide cost competitive transborder service to New England, without taking under consideration service improvements, are limited.

20. In 1988 and 1989, fresh lobster and salmon accounted for almost 50 percent (by value) of all exports sent to the United States by air. However, these two products shipped by air represent only 7.3 percent of the total (by value) lobster and fresh salmon shipped to the United States. The vast majority is shipped by truck.

21. Maine and Massachusetts together receive almost 50 percent of the salmon and lobster export from New Brunswick, and the majority of this is by truck. It would be difficult to divert these products from the road to air, because of the distance and existing trucking services.

22. Products imported by air from throughout the United States are varied in composition and place of origin. Targeting any specific market as a cargo backhaul for any proposed air service would be difficult, given the diversity of imports currently moving into New Brunswick by air from the various origins.

23. Nine of New Brunswick's largest shippers of fresh salmon or lobster were surveyed to identify potential cargo movements available for a new or improved air passenger service to New England. Boston is by far the most common U.S. destination for these time sensitive seafood products.

24. The consensus among the shippers surveyed is that it is not economical to ship seafood products by air to any destination inside a 24-hour truck service. In fact, most will truck as far west as Toronto and south to New York.

25. Two of the eight shippers surveyed indicated an interest in air service. One noted air service was only used for shipments which were required for destinations beyond a single day's drive. Another indicated they would use air to ship 227,275 kg of live lobster to Boston annually.

26. Canada Post is the single largest customer of air cargo service within the Atlantic Region. All transborder mail from Prince Edward Island and New Brunswick is trucked to Saint John for sorting and then either trucked or flown to the United States. Transborder mail destined to northern or eastern Maine is sent from Saint John by truck. The remainder is sent by air to Boston.

27. From Canada Post's perspective the only improvements that could be made to transborder services would be either increased frequency between Saint John and Boston or the use of larger aircraft to increase capacity.

28. Air express is in competition with the trucking industry which can reach many New England markets almost as quickly as the scheduled air carriers. In addition, airlines are in competition with such major carriers as United Parcel Service and Federal Express which have custom officials located in their own distribution facilities. The clearance of air express packages from New Brunswick to New England is done at the U.S. airport, necessitating the customer to pick up the parcel in person.

29. It was found that a customs clearance fee of $80 to $100 per shipment is charged for cargo moving by air into the United States, while a fee of approximately $40 is charged for an entire truckload shipment. This differential greatly inhibits the movement of cargo by air as the cost is distributed over much smaller shipment sizes than truck.

30. After review of potential air cargo sources, it is estimated that the revenue that might be realized from a new or improved service to New England would fall within the 1 to 4 percent range of total passenger revenue.

31. The recent implementation of the GST and the new ATT has had the combined effect of increasing outbound air fares for transborder services by approximately 5.5 to 7 percent, while tickets purchased for transborder service originating from the U.S. will not be affected. It is not expected there will be any significant reduction in air passenger levels, given the potential for reduced costs to the airlines through savings on such items as fuel and equipment derived from the GST.

    It is not expected that significant numbers of passengers will drive to Maine to access air service for other Canadian destinations to offset the impacts of GST. The surface cost of doing so is offset by most potential ticket price savings.

32. Transport Canada's Cost Recovery Policy as proposed will increase air ticket costs by $0.14 to $1.20 per passenger, depending on the specific New Brunswick airport and the type of aircraft used. However, Transport Canada's policy assumes an initial cost recovery target of $40 million, which represents only 11 percent of full cost recovery. Some industry representatives believe cost recovery could result in price increases of as much as 20.3 percent if full recovery is implemented. There has been no indication as to the level of cost recovery that Transport Canada will eventually seek.

33. The prospect of a new bilateral agreement between Canada and the United States is unlikely to provide increased opportunity for direct transborder services for New Brunswick. A more likely scenario derived from the implementation of an "open skies" policy would result in improved transborder services at Halifax, Montreal, Toronto and possibly Ottawa, which would indirectly afford better transportation service to New Brunswick.

34. An indication of the level of usage of Presque Isle, Bangor and Portland Airports by New Brunswickers was attempted through discussions with U.S.

carriers. Approximately 10 to 13 New Brunswick originating passengers per day are utilizing the Presque Isle Airport. Generally these passengers are associated with the Edmundston to Centreville catchment area.

Both Delta and Continental's representatives in Bangor were unable to offer an estimate of the quantity of passengers they handle originating from New Brunswick.

35. Portland Airport periodically conducts license plate surveys of their parking lot. After reviewing the survey data, it is estimated approximately 210 annual trips from Portland Airport are made by New Brunswickers.

36. The Chamber of Commerce survey indicated that respondents made 120 trips originating from a U.S. airport. Bangor was the most popular gateway with 72 percent of the trips, followed by Presque Isle at 16 percent, Boston at 10 percent and Portland at 2 percent.

37. During the course of this study, 9 New Brunswick travel agents and 4 Maine travel agents were interviewed as a means of estimating travel characteristics of New Brunswickers originating from a U.S. airport. Travel agents interviewed in Moncton, Saint John and Fredericton indicated they sold from 100 to 430 air tickets annually, representing less than 8 percent of their overall business. The four Maine travel agents interviewed indicated they sold a combined total of approximately 480 tickets to New Brunswick residents for travel from Maine airports.

38. It was constantly found that between 81 and 88 percent of all tickets sold for a U.S. origin fell into either the H-class (second level discount) or V-class (deep level discount). A further 9 to 11 percent bought B-class (first level discount). The remaining 1 to 4 percent were found to use Business or Regular Economy class fares.

39. Edmundston travellers rely almost exclusively on Presque Isle airport when originating from the United States, while passengers from either Fredericton or Moncton usually use Bangor. It was found, however, that 41 percent of those from Moncton were travelling to Boston for air service.

40. Trips to either Florida or "sun destinations" in the southern states consistently accounted for 61 to 69 percent of all trips originating from a U.S. airport. The remaining destinations were scattered throughout the U.S. showing no other popular destination.

41. In 1986 the University of New Brunswick's Transportation Group conducted a province-wide survey of households on behalf of Air Atlantic. In all, over 1,975 households were surveyed.

42. The expanded survey results estimated that nearly 3,200 person-trips were made annually from New Brunswick (not including border communities such as Woodstock and St. Stephen) to a New England airport. It was found that Bangor was the most common gateway attracting almost half of those driving from New Brunswick. Presque Isle was found to be the most popular New England gateway for those originating from the Edmundston area (92.4 percent). Table 4.3 summarizes the person-trip distribution by New Brunswick origin and U.S. airport.

43. It was found that the vast majority of those driving to a U.S. airport from New Brunswick are buying second and deep level discount tickets. Given the nature of these trips, it would be essential that a new or improved transborder air service compete on a cost basis, if some of these trips are to be diverted from the surface.

44. A study entitled *U.S. Pleasure Travel Market, Canadian Potential,* which conducted almost 9,000 in-home personal interviews in the United States, determined that the features such as: beautiful scenery, lots to see and do, well-known and popular landmarks, and interesting cities and towns are important attributes for general touring travellers visiting an area.

45. The high potential travellers that would tour Canada were identified to likely be retired or older, college educated and from urban areas. Their interests were found to be somewhat different than the general touring population, and included dining at a variety of restaurants, cultural activities, visiting small towns and villages, strolling about, being by the ocean and shopping. All these activities can be offered in New Brunswick.

46. Tauck Tours offer two different tour plans to the Atlantic Provinces. One involves a New England - Nova Scotia bus tour which utilizes the Portland - Yarmouth ferry for accessing Nova Scotia, then returns to New England via New Brunswick.

The other tour offered is a fly-charter operation which originates in Newark and flies three bus loads of passengers into Halifax at a time to either take a tour of Nova Scotia or a New Brunswick - Prince Edward Island bus tour. This service is operated once weekly from June through October and typically accommodates upwards of 1,300 passengers per season.

47. Tour Brokers International are planning to offer 15 tours during the 1991 season. One tour package will involve a 12 day plan originating from Toronto and utilizing rail service to Saint John, followed by a bus tour of the Maritime Provinces. The other tour package is a 12 day fly-drive plan which originates from various points in the U.S. and flies to Bangor. From Bangor, a bus is chartered to tour various Maritime attractions.

The tour operator would prefer to fly into New Brunswick, if a cost competitive charter rate could be negotiated.

48. Previous experience has shown that any transborder service to Boston must offer on the route an aircraft such as the deHavilland DASH 8 as a minimum size and comfort level.

49. There appears to be three possible alternatives to improving transborder passenger air service out of New Brunswick. The first such possibility is improving the existing service by feeding Moncton, Fredericton and northern New Brunswick traffic into Saint John to take advantage of the Saint John - Boston two return flights per day service. The second possibility is to evaluate the alternative of a co-terminal service from Moncton to Fredericton to Boston. This routing would generate a maximum of 11 trips per flight on a two return flights per day service. The third alternative would be to evaluate a co-terminal service which would provide one return flight per day. This type of service would generate a maximum of 13 passengers per flight. Both these estimates do not include the diversion of existing surface

trips. Northern New Brunswick potential transborder volumes are less than one per day.

50. The possibility of tying the northern New Brunswick airports, namely Bathurst, Chatham and Charlo, into the existing Saint John to Boston service was evaluated. It was found that the present service providing air travel to the northern airports does not permit convenient access to the existing New Brunswick transborder service.

51. The rescheduling and rerouting of Air Atlantic's existing flight itineraries are best approached by the airline themselves, given the complexities which are involved when adjusting schedules. Furthermore, the many ramifications of rescheduling an aircraft such as crew scheduling, maintenance, and expansion objectives are best dealt with by the airline. However, this study has shown that there is an excellent opportunity for the regional carrier to reschedule and coordinate its schedules to enhance the Saint John - Boston service by tying other regional services from Fredericton and Moncton into Saint John. When establishing or restructuring new northern New Brunswick routes to the southern airports, consideration should be given to tying into the transborder service.

52. To estimate the economic benefits which would be derived from the implementation of a new transborder air service, an evaluation was completed on a co-terminal service originating in Moncton, stopping in Fredericton and them continuing to Boston. Inbound services would be the same itinerary in reverse. Two separate service levels were evaluated, two return flights per day, and one return flight per day.

53. Given a load factor of 11 passengers per flight, 2 return flights per day and a competitive fare, the co-terminal service can be expected to lose $1.415 million annually. The deficit results from total annual allocated costs of $3.377 million being offset by $1.962 million in total revenue.

With the average growth rates for transborder air service from the Maritimes to the United States at approximately 5 percent, it would be another 14 years before volumes will reach breakeven levels.

54. Based on one return flight per day, 13 passengers per flight and a competitive fare, a co-terminal service involving Moncton - Fredericton and Boston can be expected to lose $.752 million during its first year of operation. The deficit results from total annual allocated costs of $1.912 million being offset by $1.159 million in total revenue.

Breakeven passenger loads could be expected in approximately 12 years.

55. The economic benefits to New Brunswick of having a new air service connecting Moncton and Fredericton to Boston are the sum of direct and indirect revenues and employment income generated by the service. Direct benefits of the service would be from revenues received by the airline from passenger tickets and freight charges, by the airports from aircraft landing and general terminal fees and auto parking fees, as well as by various commercial operations including airport concessions, car rental agencies, travel agencies, accommodations and restaurant facilities. In addition, direct benefits are derived from the employment income received by the aircraft crew.

The indirect benefits to New Brunswick are those multiplier or "spin-off" benefits, which result from the direct expenditures and employment income created by the prospective service. For instance, the income earned by the aircraft crew would be in part spent on various goods and services, providing a marginal increase in business activity and so on.

Other benefits available to the Provincial and Federal Governments are the new revenues from the various taxes applied to the direct revenues and incomes. The taxes include the Air Transportation Tax (ATT), Goods and Services Tax (GST), Provincial Sales Tax (PST), Federal Income Tax (FIT) and Provincial Income Tax (PIT).

56. With a co-terminal service involving two return flights per day, the total net economic benefit to the Province is $2.095 million annually, comprised of $1.188 million in direct benefits and $0.907 in indirect benefits. This compares with a net annual operating loss of $1.415 million.

57. The net economic benefit generated by a co-terminal service providing one return flight per day is projected to be $1.279 million annually, which compares with an annual operating loss of $.725 million. Net direct benefits are estimated at $.726 million while net indirect benefits would be $.553 million.

58. There are some limited potential induced industrial benefits which could result from improved transborder air service. These include the fly-drive tourism business, aquaculture and fisheries fresh product delivery and same-day courier services.

2.2 Recommendations

1. The potential to ship 227,275 kg of fresh lobster to Boston annually by air should be investigated by a regional carrier. Westmorland Fisheries have indicated a desire to use an air service to move this product.

2. Attempts should be directed at reducing the custom clearance fees for air shipments made by scheduled passenger service. This would permit air service to more effectively generate revenue as a supplement to scheduled passenger service.

3. Efforts at promoting a fly-drive New Brunswick tour package should be directed at penetrating the large U.S. urban markets such as Boston, Hartford and New York, while targeting the retired or older population. Emphasis should be placed on promoting New Brunswick as a place with many cultural activities, unique villages, varied dining, seashores and shopping.

4. Discussions should be held with Tauck Tours to determine the possibility of using Moncton as a gateway for their fly-drive tour of New Brunswick - Prince Edward Island. Presently, this service is offered through Halifax.

5. A regional carrier should investigate the possibility of offering a fly-charter service from Bangor to New Brunswick to Tour Brokers International. This service could be offered at off-peak scheduled service times.

6. Air Atlantic should consider restructuring and adjusting its scheduled flight itineraries so that the Boston - Saint John service could be accessed by those originating from, or destined to, Fredericton. This readjustment could divert upwards of four passengers per flight from existing routings over Montreal and Toronto.

7. Air Atlantic should consider a restructuring of its Halifax - Saint John - Boston route to include Moncton as an intermediate stop between Halifax and Saint John. This would provide the feeder service necessary for better transborder service from Moncton and could potentially direct upwards of 7 passengers per flight from routings over Montreal, Toronto or Halifax.

8. If route restructuring and flight rescheduling is not possible to improve transborder air service for Moncton and Fredericton, the Province should approach a regional carrier to discuss the possibility of establishing a co-terminal service involving Moncton, Fredericton and Boston.

CHAPTER 3.0

PHASE I - POTENTIAL FOR IMPROVED SCHEDULED AIR SERVICE

3.0 PHASE I - POTENTIAL FOR IMPROVED SCHEDULED AIR SERVICE

3.1 Summary of Past Transborder Services From New Brunswick

Transport Canada's Policy and Co-ordination Branch was contacted regarding the various past route structures which provided transborder air service from New Brunswick. Information was extrapolated from reported quarterly passenger volumes beginning with 1980.

3.1.1 Saint John

For the better part of the 1980's, Saint John has enjoyed direct air service to Boston. Up until 1984, Air Canada flew direct DC-9 service from Saint John to Boston. However, in 1984, the service was changed so that on the return portion of the routing a stop at Yarmouth was made before reaching Saint John. This modified Air Canada service remained in place until October of 1988 when Air Nova took over and restructured the route. The service that Air Nova initiated in 1988 reversed the flow of the routing so that the service began in Saint John, stopped in Halifax, necessitating a change in aircraft, and then flew to Yarmouth before reaching Boston. This service is still in operation.

During the third quarter of 1987 Air Atlantic began to provide direct return air service between Saint John and Boston twice daily, Sunday through Friday and one return flight Saturday. The service still operates with essentially the same scheduling. All flights are provided by a 37-seat deHavilland DASH 8 turbo-prop aircraft.

Eastern Express, who was affiliated with Eastern Airlines, initiated a service in the third quarter of 1986 which had a routing from Saint John to Bangor, then on to Boston. The service ran until the fourth quarter of 1988. Annual volumes for the service were 90 passengers for the portion of 1986 it operated, 2,848 passengers in 1987, and 501 passengers during the portion of 1988 that service was available. The service was dropped in concert with Eastern Airlines' discontinuance of its mini-hub operations in Portland, Maine. The aircraft used was a 15-passenger Beech-99 turbo-prop airplane. Eastern Express had also operated a service from Portland to Halifax with a 19 passenger Beech-1900 which ceased operations at the same time.

In addition to the direct transborder air service to Boston, Saint John passengers can also access U.S. destinations utilizing Montreal or Toronto as a gateway.

3.1.2 Fredericton

Valley Airlines has provided the only direct air service between Fredericton and the United States since 1980. The airline, which was based out of Frenchville, Maine, was a subsidiary of Bar Harbour Airlines. The service was initiated in September, 1986, providing a direct link between Fredericton and Bangor using an 8-seat Cessna-402. Approximately 110 passengers were carried during the remainder of 1986 with the service carrying an additional 182 passengers before ceasing operations in the second quarter of 1987.

Presently, the majority of transborder destinations are serviced with routings over either Montreal or Toronto.

3.1.3 Moncton

Moncton has not had direct air service to any point in the United States during the 1980's. In 1987, when Air Atlantic first initiated its Saint John - Boston service, Moncton was included in the routing. The morning outbound routing consisted of Moncton - Halifax - Saint John - Boston, while inbound morning service was Boston - Saint John - Moncton - Halifax. The afternoon outbound routing included Halifax - Moncton - Saint John - Boston, while inbound service was Boston - Saint John - Halifax - Moncton. Air Atlantic personnel indicated low passenger volumes from Moncton resulted in the discontinuance of one-stop outbound afternoon service and morning inbound routings through Saint John by the second quarter of 1988.

The majority of transborder volumes originating out of Moncton is presently being routed directly to either Montreal or Toronto for one-stop service to the United States.

3.2 Identification of Existing Transborder Services

At the present time, transborder air trips from New Brunswick are primarily being routed through either Montreal, Toronto, or Halifax. The only existing direct

service is offered between Saint John and Boston by Air Atlantic. Return service is offered twice daily, six days per week, with a single flight on Saturdays. All flights are provided with a deHavilland DASH 8 turbo-prop aircraft. Morning departures from Saint John are at 9:05 a.m., while the second flight leaves at 3:25 p.m. Boston departures are at 10:15 a.m. and 4:40 p.m. The current schedule provides same day service for those originating in Saint John, but not for those out of Boston.

Recently, Precision Air which is a U.S. regional carrier affiliated with Northeast Airlines, has applied for a license to provide two new services from Boston to New Brunswick. The routes are Boston - Moncton - Charlottetown and Boston - Saint John - Fredericton. The routes would be served with a 19-passenger Metroliner with an anticipated start-up of May 15, 1991. Proposed scheduling is for 2 return flights daily, 6 days per week. The Boston - Moncton - Charlottetown service tentatively has arrival times of 12:35 p.m. and 9:00 p.m. in Moncton and 2:30 p.m. and 10:30 p.m. in Charlottetown. Scheduling of the Boston - Saint John - Fredericton routing is currently unknown.

The application has already been endorsed by the United States, while final approval is pending from the Canadian Minister of Transport.

3.3 Quantification of Current Demand

3.3.1 Air Demand

Characteristics concerning existing travel patterns for air trips made between New Brunswick and the U.S. were required before a thorough evaluation of the potential for a proposed or improved service could be undertaken. The Policy and Coordination Branch of Transport Canada is responsible for aviation statistics and forecasts for air services in Canada. The most current information available was collected from Transport Canada in January, 1991. Presently, passenger volumes for transborder trips are only available for the full year of 1989, on a quarterly basis for specific city-pairs. The 1990 volumes will not be available until the fall of 1991, however, historic transborder volumes and associated characteristics suggest that there should be no significant changes in the 1990 figures, other than normal projected annual growth as discussed later.

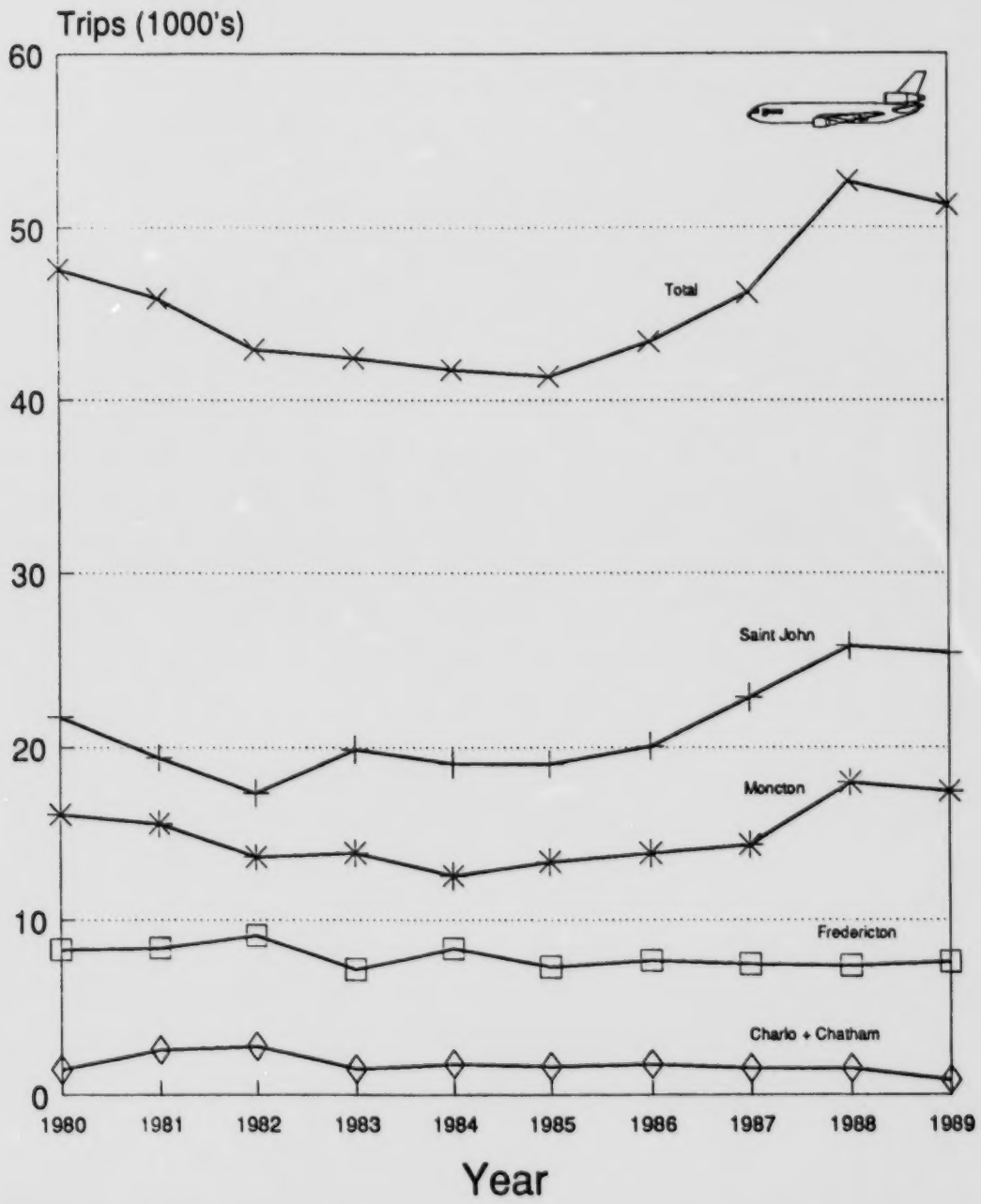
The passenger volumes which are reported on a city-pair basis, and subsequently published by Statistics Canada in Report 51-205 **"Air Passenger Origin and Destination Transborder Report"**, are derived from a sampling of air tickets generated by the larger air carriers. Every tenth ticket processed by the carriers is selected for the survey and its origin and destination recorded. Results from a similar sampling procedure undertaken annually by the United States Department of Transportation supplement the information collected domestically. There is an exchange of data between both countries which provides information concerning ultimate destinations (or origins) of trips which are made on non-domestic carriers.

A carrier's participation in the survey was only required in the Statistics Canada sampling process if the annual volume of passengers that they handle reaches a minimum of 300,000. Since regional carriers such as Air Nova and Air Atlantic carry passenger volumes below the minimum threshold, they were not required to participate in the sampling procedure. However, it is understood these two carriers have participated in the 1990 survey. It is suggested the Province contact Statistics Canada concerning continued participation by the regionals in future surveys. This would provide a more comprehensive picture of air travel to and from New Brunswick.

The consequence of non-participation by either of the region's two carriers in 1989 is that passenger volumes between Saint John and Boston exclusively via Air Atlantic or Air Nova were not recorded as part of the estimated total passenger volumes. For this reason, it was necessary to obtain flight specific passenger volumes directly from the regional carriers, or derive them based on total annual airport movements, to obtain an accurate annual estimate of total transborder movements.

Figure 3.1 depicts the historical trend of total transborder passenger volumes between the major New Brunswick centres and the United States. Volumes since 1987 have been adjusted to reflect passenger movements made exclusively on regional carriers which were not captured as part of the survey process. As shown, transborder volumes originating from Fredericton have been relatively stable while those in Saint John and Moncton have shown a notable increase over the past 3 years. Caution should be used, however, when comparing volumes after 1987 with those before, again because of the inclusion of transborder volumes carried by regional carriers for the last three years of data.

Total Transborder Air Trips



Source: Statistics Canada Report 51-205

FIGURE 3.1

Figure 3.1 indicates that transborder trips from Charlo and Chatham combined represent approximately 2 to 4 percent of the total New Brunswick market. There were no reported transborder trips from Bathurst or St. Leonard.

3.3.1.1 United States Destinations

A break-down of the U.S. destinations for transborder air travel associated with New Brunswick airports is presented in Table 3.1. As shown, the Florida market represents 29 percent of the total transborder air market. Boston is the most popular destination accounting for 42 percent of total transborder movements. Furthermore, it is noted that the largest city-pair is Saint John - Boston. It would have been desirable to have sufficient data to determine the final origins and destinations of the Saint John - Boston service, thus revealing the percentage of connecting passengers. However, this data was not available from the carrier and, therefore, the 42 percent associated with Saint John - Boston should be viewed with this in mind.

Of the 15,722 total annual passengers who travel between Saint John and Boston, it should be noted that some of these would probably originate from the Fredericton or Moncton areas and travel to Saint John by auto to gain access to the direct service. This is an important point given the fact that should improved transborder service be established in Fredericton or Moncton, a diversion could be expected from the existing Saint John service. There are insufficient data available to determine what this percentage would be if new services were established.

New York is the third most popular destination representing 9 percent of total transborder volumes, while Chicago and Los Angeles each represent 4 percent. The six most popular destinations were found to represent 88 percent of all air passenger demand to the United States. For this reason, these top 6 U.S. destinations were selected for further analysis to simplify assessment of proposed or improved air services.

The annual transborder passenger volumes between New Brunswick airports and U.S. airports shown in Table 3.1 have also been converted to daily passenger demand, assuming transborder air service were available 7 days per week, or on a 5 day per week basis. Expressing the transborder passenger volumes on a daily basis provides a clearer idea of the existing demand and how it relates to a

Table 3.1

1989 TRANSBORDER AIR PASSENGER DEMAND
Total Volumes (inbound + outbound)

U.S. Destination	Fredericton	Saint John	Moncton	Northern NB (Charlo+Chatham)	NB TOTAL	% of Total
Florida:						
Ft. Lauderdale	20	0	0	-	20	
Miami	680	850	1720	-	3250	
Orlando	270	50	40	-	360	
Tampa	1770	3950	5490	-	11210	
West Palm Beach	80	10	30	-	120	
Sub-total:	2820	4860	7280	-	14960	(29)
Boston	1054	15772	4521	270	21617	(42)
New York	1100	1440	1660	270	4470	(9)
Chicago	540	600	730	-	1870	(4)
Los Angeles	370	620	850	-	1840	(4)
San Francisco	200	250	220	-	670	(1)
Hawaii	120	280	160	-	560	(1)
Dallas	50	110	250	-	410	(1)
Washington/Baltimore	40	150	160	-	350	(1)
Philadelphia	100	90	100	-	290	(1)
Atlanta	60	40	130	-	230	(0)
All Other U.S. Destinations	1150	1190	1400	320	4060	8)
TOTAL ANNUAL VOLUME	7604	25402	17461	860	51327	
Daily Passenger Volumes (7 days/week service)						
2-way pax/day	21	70	48	2	141	
1-way pax/day	10	35	24	1	70	
Daily Passenger Volumes (5 days/week service)						
2-way pax/day	29	98	67	3	197	
1-way pax/day	15	49	34	2	99	

Source: Statistics Canada Report 51-205

transborder service flown with a DASH 8 aircraft, which has 37 seats. A DASH 8 can generally be operated at a breakeven load factor of approximately 55 percent or 20 passengers per flight. This figure, of course, changes depending on the passenger fare mix.

The figures in Table 3.1 indicate there are currently 10 passengers per day for each day of the year originating from Fredericton to the United States, 24 from Moncton, 35 from Saint John and 1 from Northern New Brunswick. Similar volumes exist for passenger movements from the United States to the New Brunswick airports. As a means of comparison, if transborder air service were available only 5 days per week, the one-way daily volumes out of Fredericton, Moncton, Saint John and Northern New Brunswick would be 15, 34, 49 and 2, respectively. Thus, if it were possible to capture all this traffic on a DASH 8 transborder service, both Saint John and Moncton would have greater than breakeven load factors. Fredericton would have to divert at least 5 trips per day from surface travel, or stimulate new demand. With service 7 days per week, Fredericton would have to divert or stimulate approximately 10 more trips daily.

To capture all the available market would require a service to compete favourably with existing services in terms of frequency, scheduled times and fares. To do this requires a service to offer same day return or 2 return flights per day. If this were the case, the daily volumes out of New Brunswick airports would be reduced by half. Thus for same day return service 7 days per week, the volumes on a per flight basis out of Fredericton, Moncton and northern New Brunswick are reduced to 5, 12 and 0.5, respectively.

The above discussion indicates that those New Brunswick airports without existing transborder air services that are not routed over Montreal, Toronto or Halifax, do not have sufficient demand by themselves to support a service based solely on existing transborder volumes. It will be necessary to either divert existing surface trips to the air mode, stimulate new trips using an air service, and/or conduct some type of a co-terminal operation. Any new service would have to compete on both a service and cost basis with existing flights over Montreal and Toronto.

3.3.1.2 Seasonality of Demand

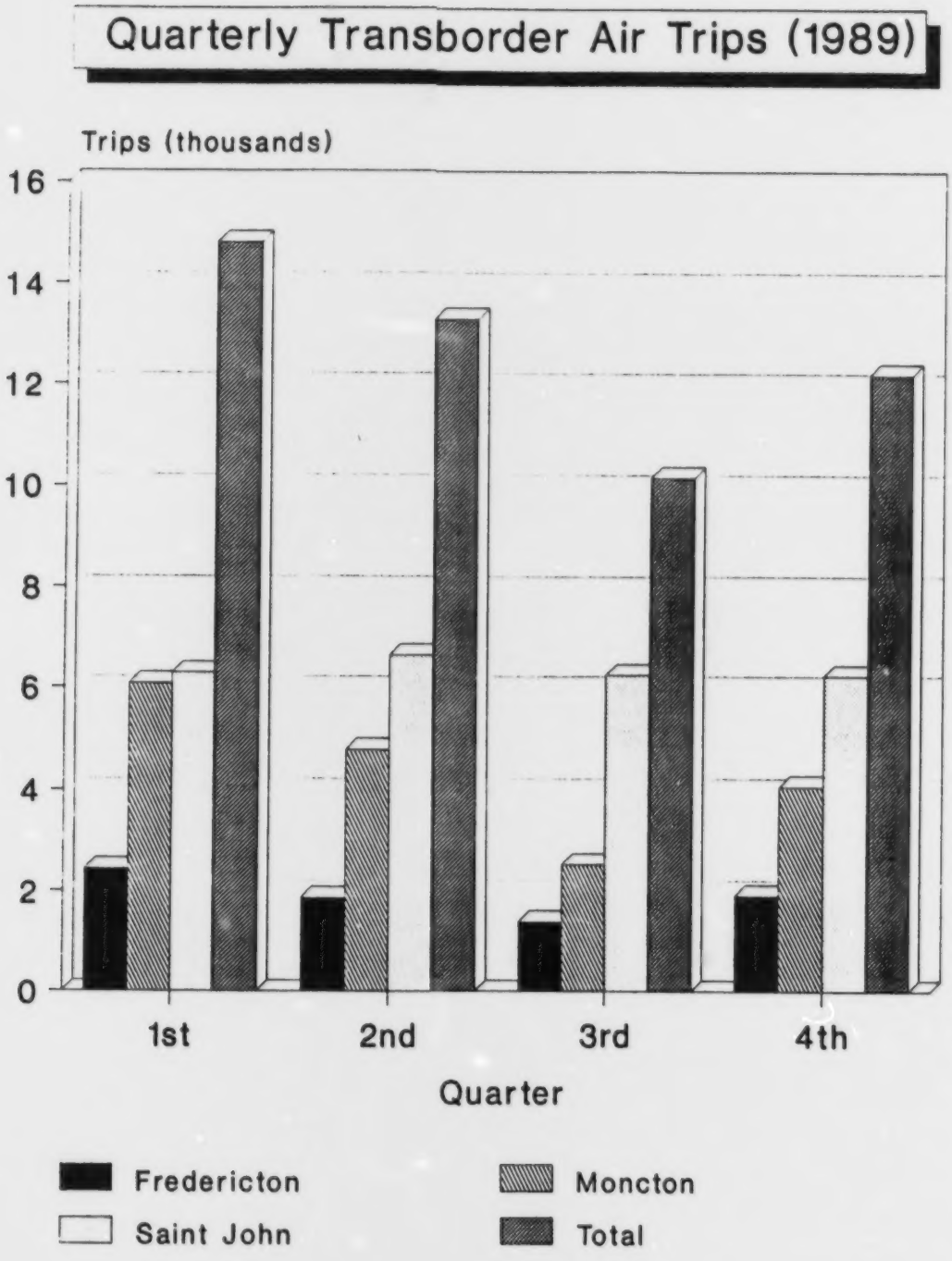
The seasonality of transborder operations is depicted in Figure 3.2 which shows passenger volumes from the major New Brunswick origins on a quarterly basis. Data for the northern New Brunswick airports were not available. As seen, the first quarter represents the period when transborder air demand is at its highest followed by the second quarter as the next busiest period. The third quarter is the least busiest for transborder air service, which, as seen at a later point in this report is in direct contrast to the seasonality of surface trips. Of interest is the seasonality of transborder air volumes from Saint John which, as indicated in Figure 3.2, is very consistent from quarter to quarter. Since Saint John has the only direct service to the United States of all New Brunswick cities, it would appear that a stabilizing effect on seasonality of air passenger demand is experienced with the provision of direct services. The seasonality of demand for both Fredericton and Moncton mirror that of the Province's overall pattern, which takes northern New Brunswick airports into consideration.

Although no daily variation transborder data are available, previous work has shown that daily passenger demand for typical short haul business traffic varies throughout the week. The peak days include Tuesday, Wednesday, Thursday and Friday, representing approximately 72 percent of the total weekly demand with Monday representing an additional 11 percent. Saturday is the lowest demand day at 8 percent.

3.3.1.3 Trip Purposes

Normally air terminal surveys are the best source to establish trip purpose, however, insufficient data presently exist. It was originally proposed to solicit this type of information from local New Brunswick travel agents for outbound trips. While travel agent records can reveal the distribution of transborder ticket sales by fare class, it was cautioned that some business passengers are now often travelling under discount rates and thus any detailed review on this data would not be reliable.

Results of a household survey conducted by Air Atlantic in 1986 gives the best indication of trip purposes for transborder air services. Air Atlantic has given permission to use survey results in this study. There were 1,975 households surveyed province-wide to gather information concerning transborder service to the



Source: Transport Canada

FIGURE 3.2

United States for the preceding one-year period. As shown in Figure 3.3, 35 percent of trips to the United States by air were business related, 52 percent were vacation related, while the remaining 13 percent were categorized as some "other" purpose. Of the 52 percent who travelled for a vacation, the majority went during the winter (29 percent), while the remainder (23 percent) travelled for a summer vacation. This trip purpose distribution compares favourably with those used by Transport Canada in their model for forecasting transborder air trips.

Overall, the Transport Canada model assumes approximately a 40 percent business component and a 60 percent non-business component for trips between the Maritimes and the United States. The proportion varies depending on the specific U.S. markets. For example, trips to Boston are more heavily oriented to a business purpose (47 percent), while the model assumes a vast majority destined to such locations as Florida are for non-business purposes.

3.3.1.4 Transborder Charter Volumes

The quantity of New Brunswick passengers who travelled to the United States on a chartered air service was obtained for 1987 and 1988 in Report 51-207 published by Statistics Canada. As shown in Table 3.2 the quantity of passenger traffic is extremely low relative to scheduled service. These low volumes suggest that a significant effort is required to increase the transborder charter market out of New Brunswick. If this could be accomplished, such a market would complement a regularly scheduled service during low demand times.

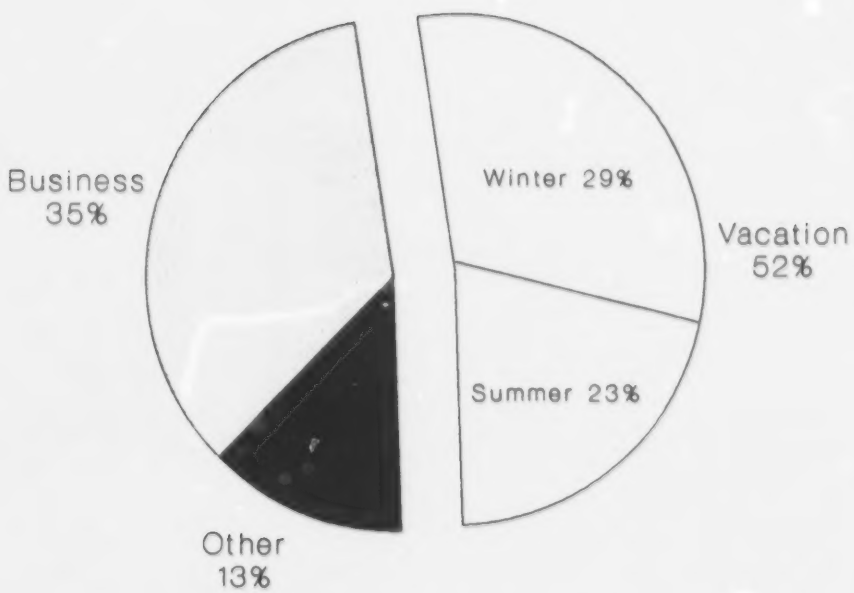
TABLE 3.2

TRANSBORDER CHARTER OPERATIONS
(ANNUAL 2-WAY VOLUMES) (ORIGINATING AIRPORT)

N.B. Origin	1987	1988
Bathurst	0	0
Charlo	1	18
Chatham	28	18
Fredericton	5	152
Moncton	0	6
Saint John	55	414
Total	89	608

Source: Statistics Canada Report 51-207.

Trip Purpose
NB Transborder Air Trips



Source: 1986 Air Atlantic Survey

FIGURE 3.3

3.3.1.5 Summary

Presently there are a total of 51,330 transborder trips associated with New Brunswick airports. Almost 50 percent (49.5) utilize the Saint John airport, 34.0 percent utilize the Moncton airport, 14.8 percent are associated with the Fredericton Airport and the remaining 1.7 percent are associated with Charlo and Chatham airports. Both Bathurst and St. Leonard airports did not record any transborder volumes. The majority of transborder air passenger volumes are presently utilizing Montreal and Toronto as a gateway to U.S. destinations.

The diversion of existing transborder volumes using existing services over Montreal and Toronto will require a New Brunswick transborder service which competes favourably in terms of overall service and fare. The volumes, when expressed on a daily demand basis, indicate a new transborder service would have to not only compete on a service and fare basis, but most likely would have to co-terminal, divert trips from the surface, and/or stimulate new air trips to increase passenger volumes to a level which would make a new service viable. This is based on the assumption that an aircraft such as a DASH 8 would be utilized to maintain passenger acceptance.

The annual and daily current transborder passenger volumes shown in Table 3.1 clearly show that there is an opportunity to improve the existing transborder service out of Saint John and thus capture some of the existing market over Montreal and Toronto by providing better connections to Saint John from Moncton and Fredericton.

3.3.2 Surface Demand

A comprehensive evaluation of the characteristics of surface trips made between New Brunswick and the United States was completed to identify the potential for diversion of some of these trips to the air mode. Characteristics, including origin-destinations, purpose, duration, border crossing location, stops, activities, vehicle occupancies, and vehicle type were obtained from several data sources.

Vehicle counts from the New Brunswick Department of Transportation show that in 1989, the total two-way border crossing traffic volume between New Brunswick and Maine was 10,727,350. Of this total, 2.8 percent were autos originating from

the United States which stayed for one night or longer while in Canada. Conversely, 3.5 percent were Canadian autos travelling to the United States for a period of at least one night. Of the remaining vehicles, 4.1 percent were found to be trucks, while 89.6 percent were same day local traffic. Buses are included in the truck category and represent a low fraction of the 4.1 percent figure.

The busiest border point was the St. Stephen/Milltown location which combined for a two-way 1989 annual total of 3,354,350 vehicle crossings. A little over 10 percent of all vehicles crossing at this point were autos which stayed out of their originating country for at least a night.

The second busiest crossing was Edmundston which had 2,230,150 vehicles moving both inbound and outbound. Just over 1 percent of all vehicles at this location were autos destined for a stay of a night or more. The Woodstock crossing was found to be the third busiest crossing, processing 901,550 two-way vehicles in 1989, of which 172,022 or over 19 percent were autos staying in either country for at least one night.

The 1989 Visitor Exit Survey was conducted from June through October by the New Brunswick Department of Tourism, Recreation and Heritage. It was found that the most common point of entry for those travelling from the United States for a stay of at least a night was St. Stephen which processed 112,834 vehicles (59 percent), while Woodstock had 33,181 (17 percent) vehicles throughout the year. The remaining 44,812 vehicles from the United States entered the province at the other border crossings.

3.3.2.1 New Brunswick to the United States

It was initially anticipated that the 1990 Canadian Travel Survey results, based on 5,000 interviews would be of particular relevance as a data source. The survey was mailed to New Brunswick households and information solicited concerning past trips made by family members. However, Statistics Canada representatives discouraged the use of this source given the small sample of respondents who detailed transborder trips from New Brunswick. The Canadian Questionnaire Survey was recommended.

Statistics Canada conducted a survey of Canadian motorists returning from the United States in 1989 which is referred to as the Canadian Questionnaire Survey. The survey consisted of a questionnaire which was distributed at the border crossings and mailed directly to Statistics Canada. In all, over 115,000 surveys were completed, of which 11,549 were returned by New Brunswick residents. All information from this survey was obtained from the Education, Culture and Tourism Division of Statistics Canada in Ottawa. The results of the survey are documented below.

3.3.2.1.1 Destinations

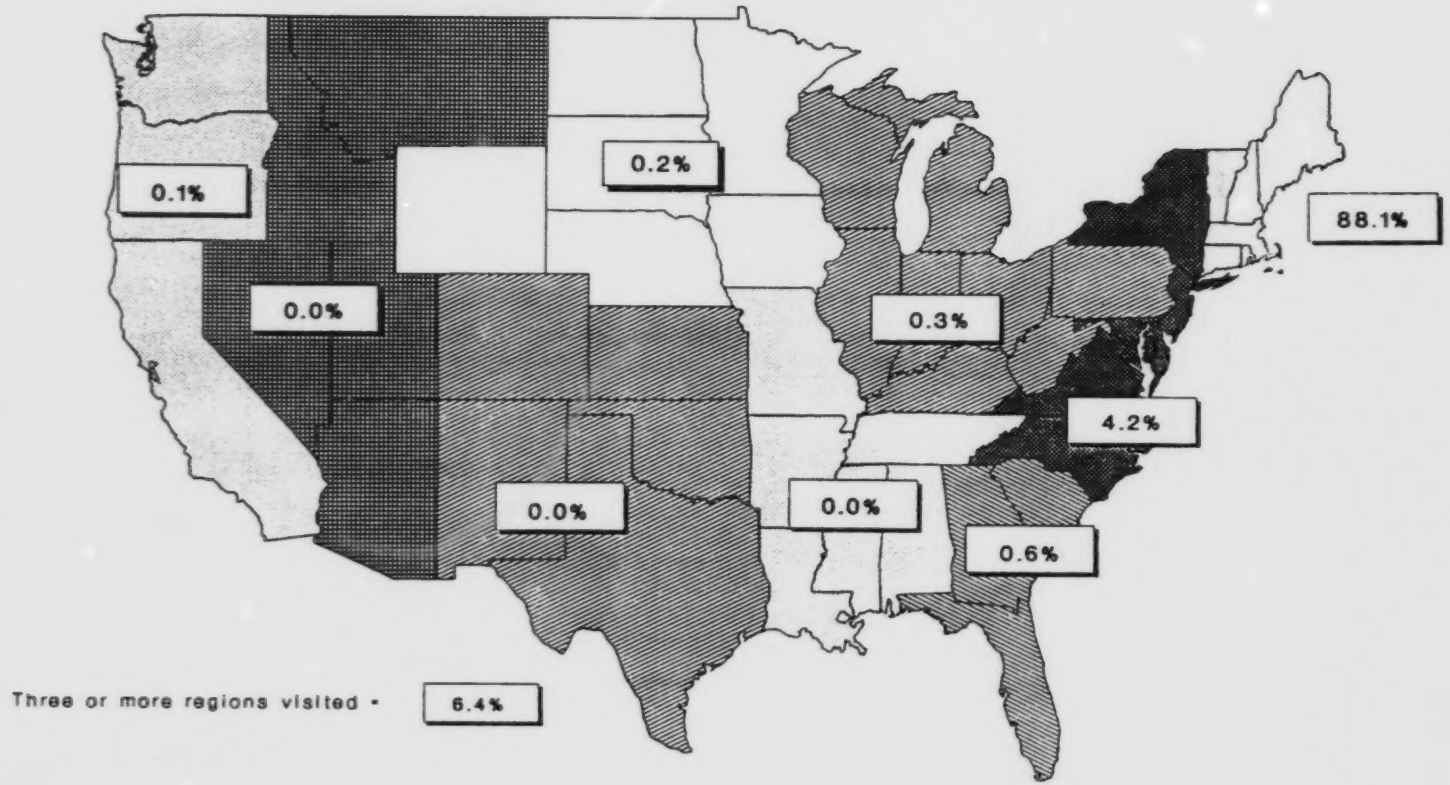
Trip destinations from New Brunswick were coded into 9 different U.S. geographic zones including: New England, Mid-Atlantic, South Atlantic, East North Central, West North Central, East South Central, West South Central, Mountain, and Pacific. Figure 3.4 depicts the 1989 distribution of person-trips by automobile, with a duration of at least one night to eliminate same day local trips made to the United States by New Brunswickers. As shown, over 88 percent of all trips are destined to the New England area. The next most popular destination is the Mid-Atlantic area which attracts 4.2 percent of all surface trips. In total, approximately 310,600 person-trips (one-way) were made for a stay of at least one night from New Brunswick to the U.S. by auto, while 362,400 trips were made by all modes (including air, bus and other).

A more detailed look at the distribution of New England destined trips is depicted in Figure 3.5. As seen, nearly two-thirds of all surface trips to the New England area are destined to the State of Maine. This represents approximately 202,262 person-trips (one-way) by auto annually. Furthermore, Massachusetts is the next most common destination, attracting 8.9 percent of all U.S. trips originating from New Brunswick. New Hampshire attracts 7.5 percent of all U.S. trips, while Connecticut attracts 3.7 percent. Vermont and Rhode Island as a combined destination only account for 2.9 percent of all New Brunswick auto trips.

With Maine being the destination for the majority of New Brunswick auto trips, a more precise disaggregation of destination by individual city was required. Again, this would facilitate the evaluation for potential of diversion from surface to air mode.

N.B. to U.S. AUTO TRIP DESTINATIONS

-by region



Source: Statistics Canada -Cdn Questionnaire Survey 1989

FIGURE 3.4

3.3.2.1.2 Seasonality

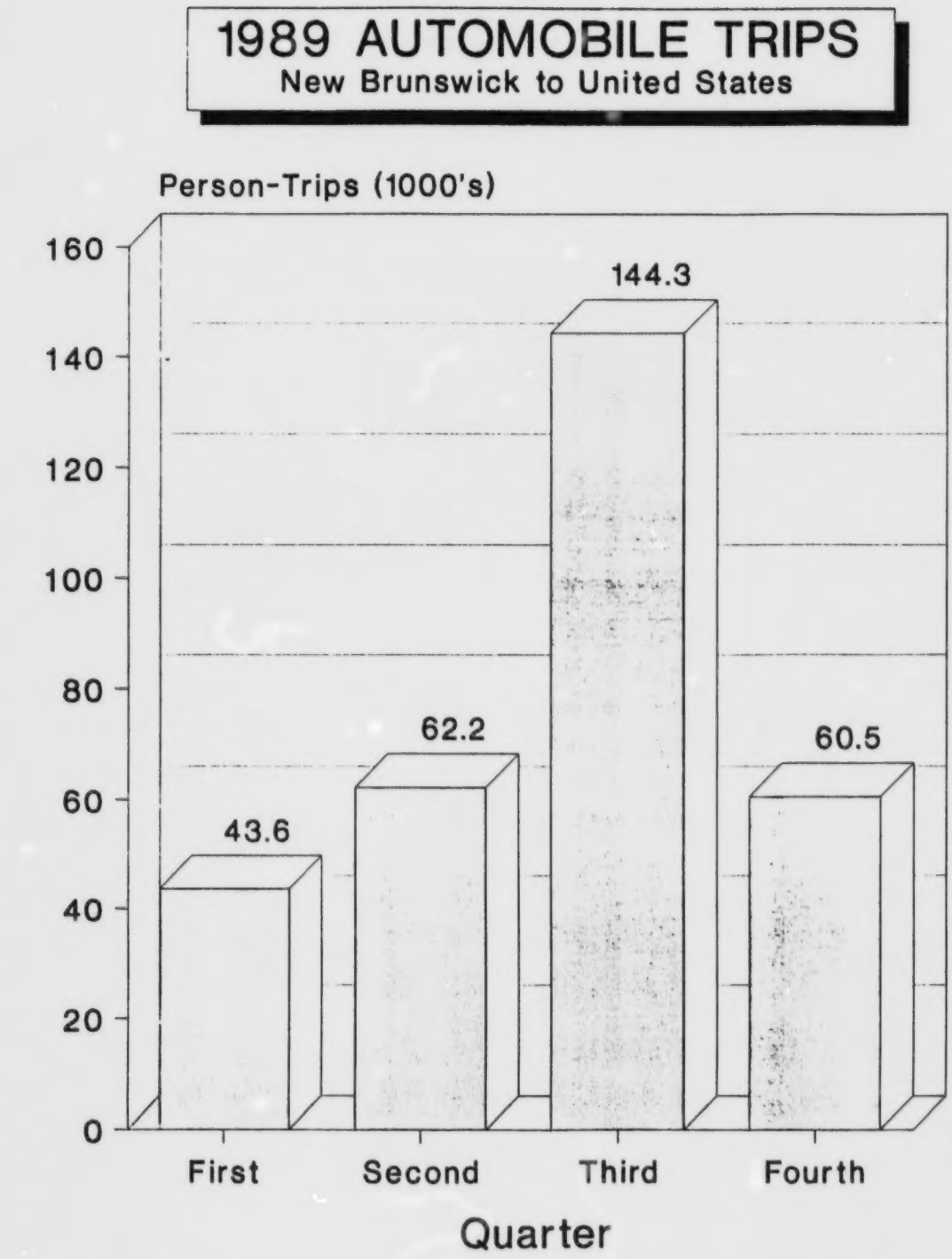
Specific auto trip totals (those staying one night or greater) were extracted from the 1989 Canadian Questionnaire Survey by quarter of the year. The results are shown in Figure 3.6. It is evident that during the third quarter over double the quantity of auto trips are made, with 144,300 person-trips (one-way), than during any other quarter. The least popular quarter for auto travel from New Brunswick to the United States occurs during the first quarter of the year with only 43,600 person-trips.

3.3.2.1.3 Mode

Figure 3.7 reflects a distribution of transborder person-trips for all modes of travel from New Brunswick to the United States. It is seen that the automobile accounts for the vast majority of person-trips with a duration of at least one night's stay at 86 percent. All other remaining modes, including air, bus, rail, truck, and others account for only 14 percent of the remaining overnight person-trips to the United States.

3.3.2.1.4 Trip Purpose

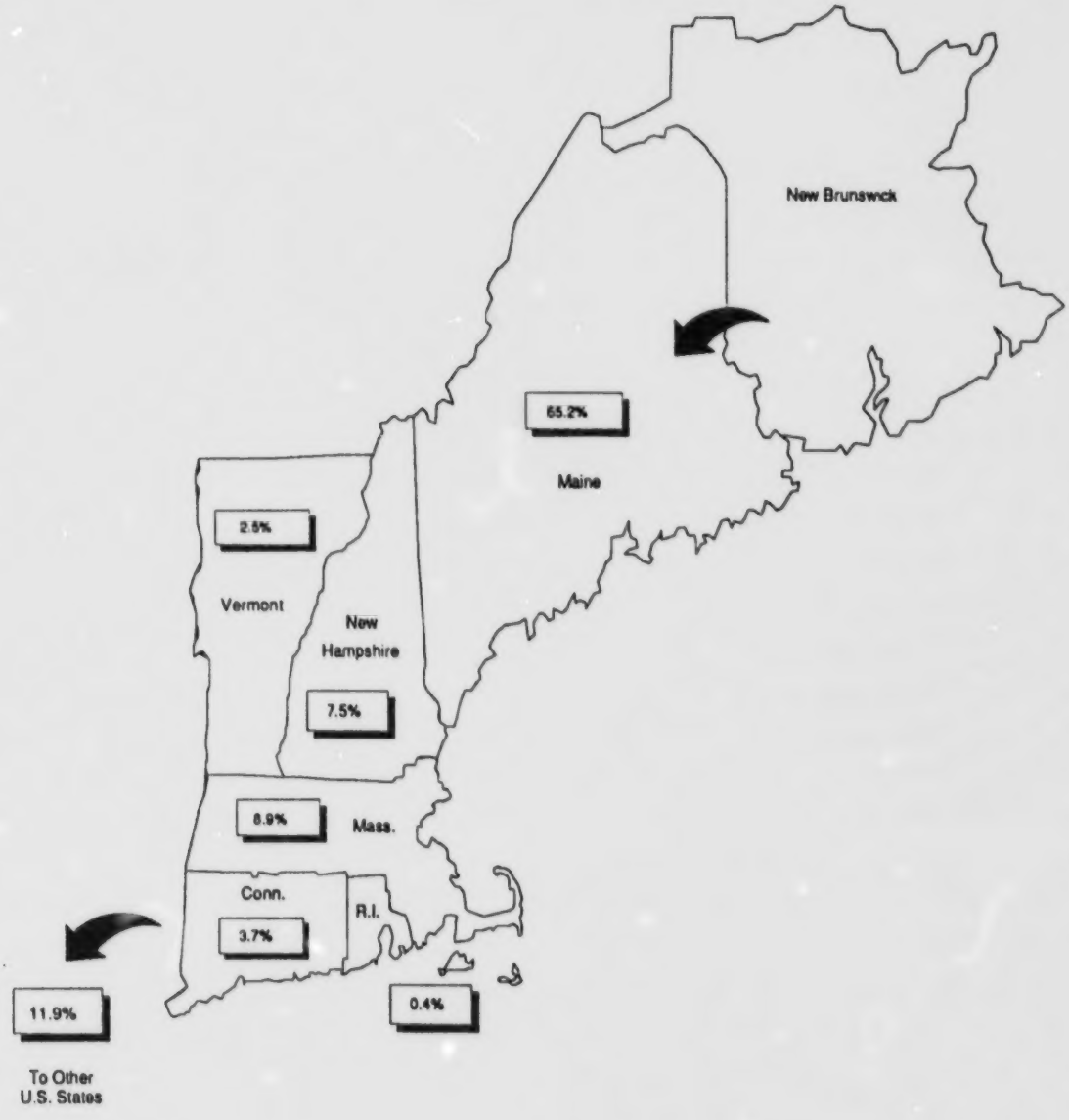
Purposes for auto trips are broken out by quarter of the year in Figure 3.8, again as found from the 1989 Canadian Questionnaire Survey. During all four quarters, "pleasure" trips are the most common reason for travelling to the United States by automobile. Pleasure trips are more than 3 times more common than the next purpose during the third quarter of the year. On an annual basis, pleasure trips represent approximately 57 percent of all auto trips to the United States from New Brunswick. The second most popular reason for travelling to the U.S. by auto throughout the year is to visit friends and relatives, representing 26 percent of all auto trips. Business accounts for only 7 percent of all annual auto person-trips to the U.S. with only 21,600 (one-way) versus an annual total of 310,600 person-trips by auto. Recall that business trips accounted for approximately 35 percent of all transborder trips by air. The category of "other" trip purposes includes combinations of business, pleasure, visiting, and other miscellaneous reasons and accounts for 10 percent of all trips. Pleasure, visiting, business and other trip purposes represent 55, 26, 10 and 9 percent, respectively, of all surface trips (not just auto) to the United States.



Source: Statistics Canada -Cdn Questionnaire Survey -1989

FIGURE 3.6

DESTINATION OF N.B. AUTO TRIPS TO THE U.S.



Note: Total New England Person-Trips by Auto=273,700 (1989)

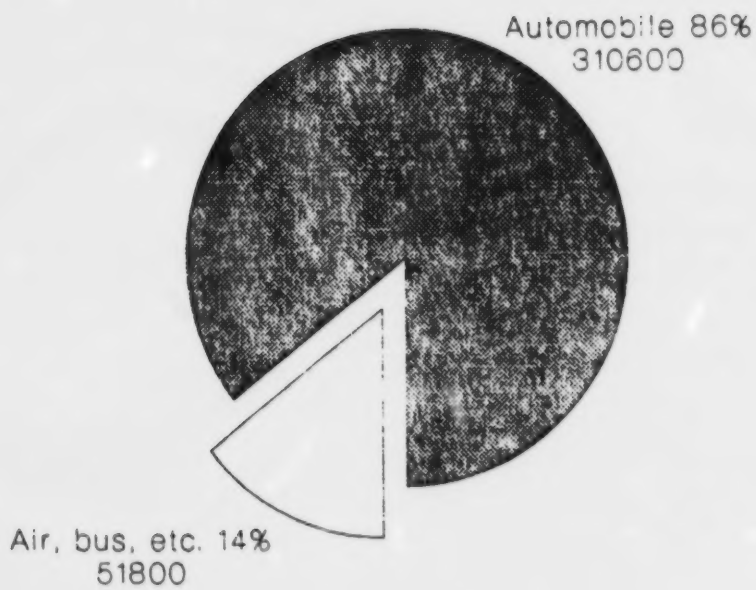
FIGURE 3.5

The St. Stephen - Calais Border Crossing Origin-Destination Survey (conducted in 1990 by Fiander-Good Associates Ltd. in concert with the Maine Department of Transportation) was analyzed to establish city-specific New Brunswick origins and Maine destinations. The off-peak travel period with respect to the tourist season was surveyed in late September on the New Brunswick side of the border. While over 2,048 interviews were conducted, the majority of these were trips made within the local St. Stephen - Calais area, resulting in a small sample size to establish destination trends within Maine. However, the peak-period survey conducted in July, on the U.S. side of the border included almost 3,500 interviews, over 1,500 of which were external to the immediate survey area. Although there were still trip volumes destined to areas in close proximity to the study area, it was found that the vast majority of trips not associated with the immediate study area is destined to the Bangor area. A conservative estimate is that 30 percent of trips from New Brunswick to Maine's hinterland via the St. Stephen - Calais crossing are destined to Bangor. Furthermore, another 10 percent are destined for the Portland - Old Orchard Beach area within Maine. At this particular crossing it was found that nearly two-thirds of those destined to Bangor are originating from Saint John, with the remainder split between Fredericton, Moncton, and the rest of the province. Of particular interest is the fact that over 11 percent of all traffic destined for Bangor are Nova Scotia and P.E.I. vehicles.

While results obtained from the St. Stephen - Calais Survey are specific to that border location, a general indication is provided with respect to New Brunswick travellers. It is also interesting to note that a recent radio interview with the Bangor Mall manager indicated 30 percent of the mall revenue, representing over $30 million, came from New Brunswick patrons.

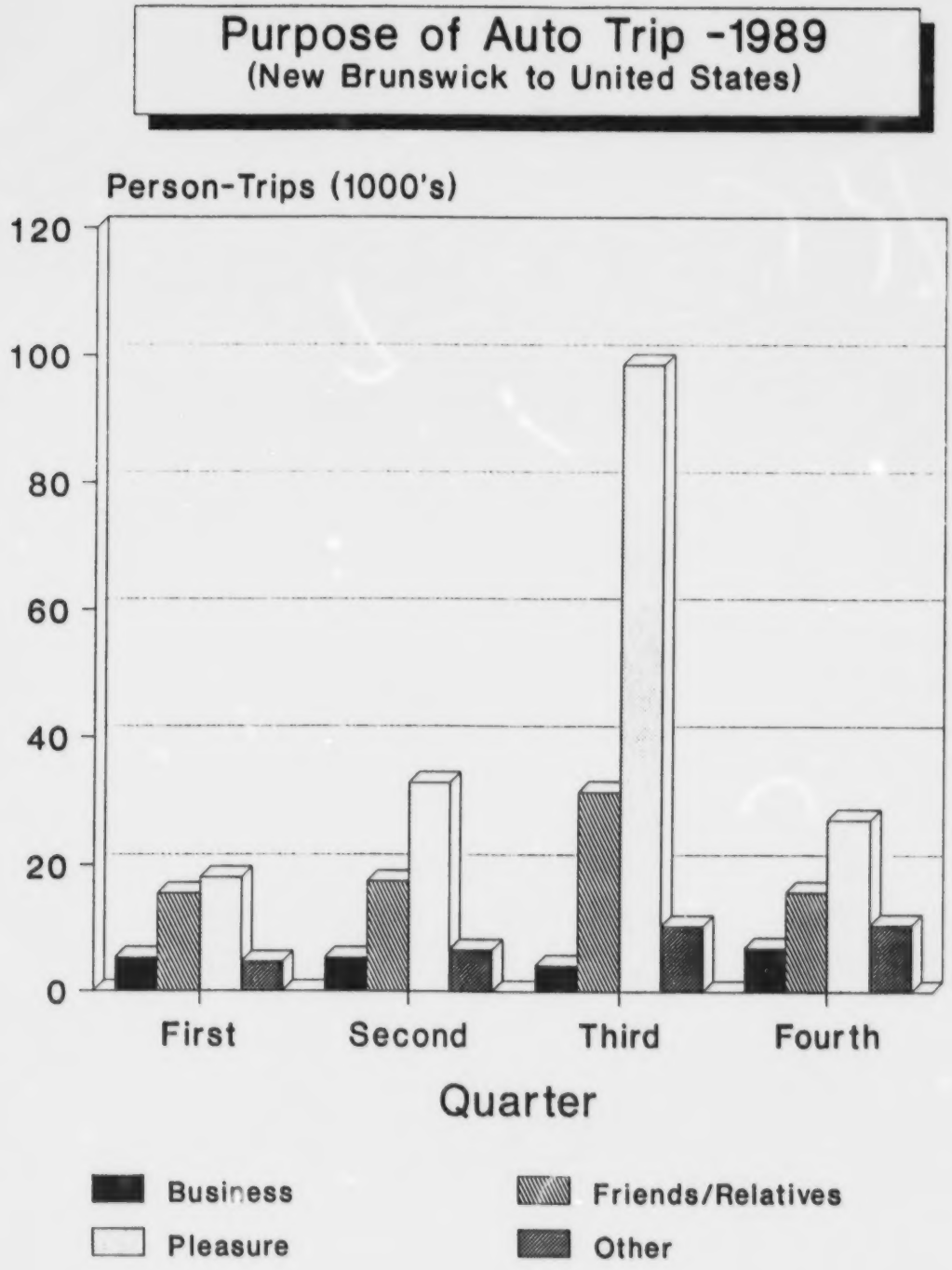
Another source of information used to estimate auto destinations was the databases generated from the 1986 Air Atlantic Study. Auto destinations within Maine for trips originating from Fredericton, Saint John, and Moncton were determined. Results confirm those interpreted from the St. Stephen - Calais Survey. Overall, for the three origin cities, it was found that Bangor was the preferred Maine destination for 43 percent of all auto trips. Calais was the next most popular, attracting 20 percent of auto trips, while Portland was next with 11 percent. The remaining 26 percent of auto trips to Maine from Fredericton, Saint John and Moncton were found to be distributed to various destinations throughout the State.

Distribution of Total Person-Trips, 1989
(New Brunswick to United States)



Source: Statistics Canada -Can. Questionnaire Survey 1989

FIGURE 3.7



Source: Statistics Canada -Cdn. Questionnaire Survey -1989

FIGURE 3.8

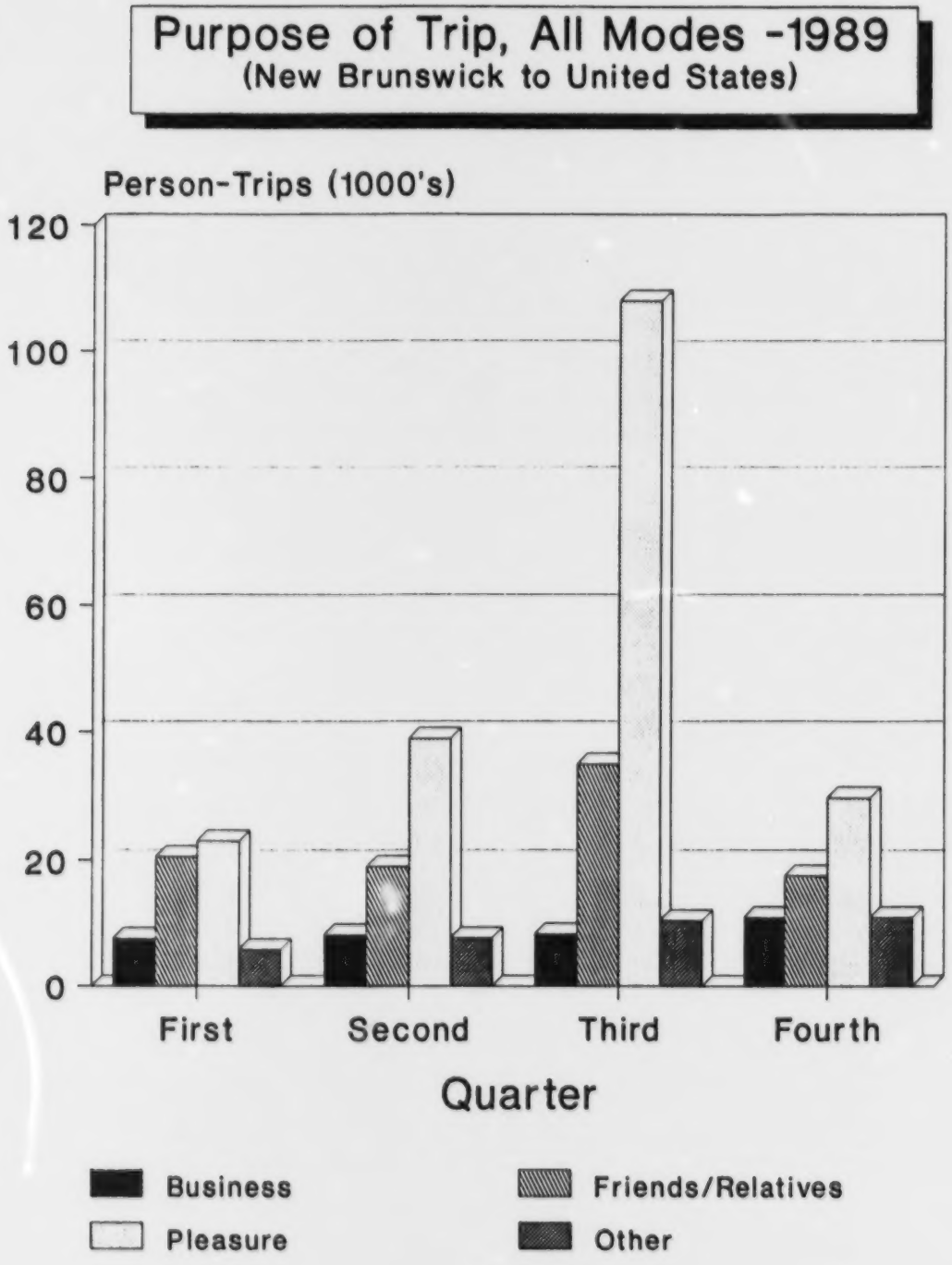
Figure 3.9 shows trip purposes by all modes of transportation to the U.S. in 1989. Essentially, trip purposes by quarter of the year for all modes closely reflect auto-only distributions with business trips showing the most disproportionate gain with the inclusion of air travel.

3.3.2.2 United States to New Brunswick

The source used to identify surface trips by Americans to New Brunswick was the 1989 Visitor Exit Survey conducted from June through October by the New Brunswick Department of Tourism, Recreation, & Heritage. Special computer runs were performed to extract the appropriate data. In total the study estimated the annual number of parties by all surface modes visiting New Brunswick from the United States for greater than one day to be 190,827 (one-way) for 1989. Assuming an average vehicle occupancy of 2.37 persons (another product of the study), it can be estimated that the 1987 annual person-trips (one-way) to New Brunswick was 452,260 for the survey year. Furthermore, it was found that autos accounted for 80.2 percent of all vehicles, which means that approximately 362,710 person-trips were by auto. This quantity is roughly equivalent to the 310,600 person-trips that were made outbound from New Brunswick by automobile.

3.3.2.2.1 U.S. Origins

Figure 3.10 depicts the regional distribution of surface trip origins from the United States to New Brunswick. As shown, the most common origin is New England which accounts for 44.1 percent of the surface trips made to New Brunswick in 1989. This is considerably less than the 88.1 percent of New Brunswickers who travelled to this particular area by auto as previously discussed. The influence of New Brunswick travel to New England to shop probably accounts for a large part of this difference. Although outbound U.S. destinations are expressed by auto trips, and inbound origins by surface trips (auto, truck, bus, etc.), a relative comparison in percentages is still valid. The Mid-Atlantic States is the next most popular origin with nearly 18 percent of all inbound visits. As shown, there is over 27 percent of the trips with no specific origin shown as the percentages for each individual state are small, indicating a diverse distribution of U.S. origins. These small percentages are not available.

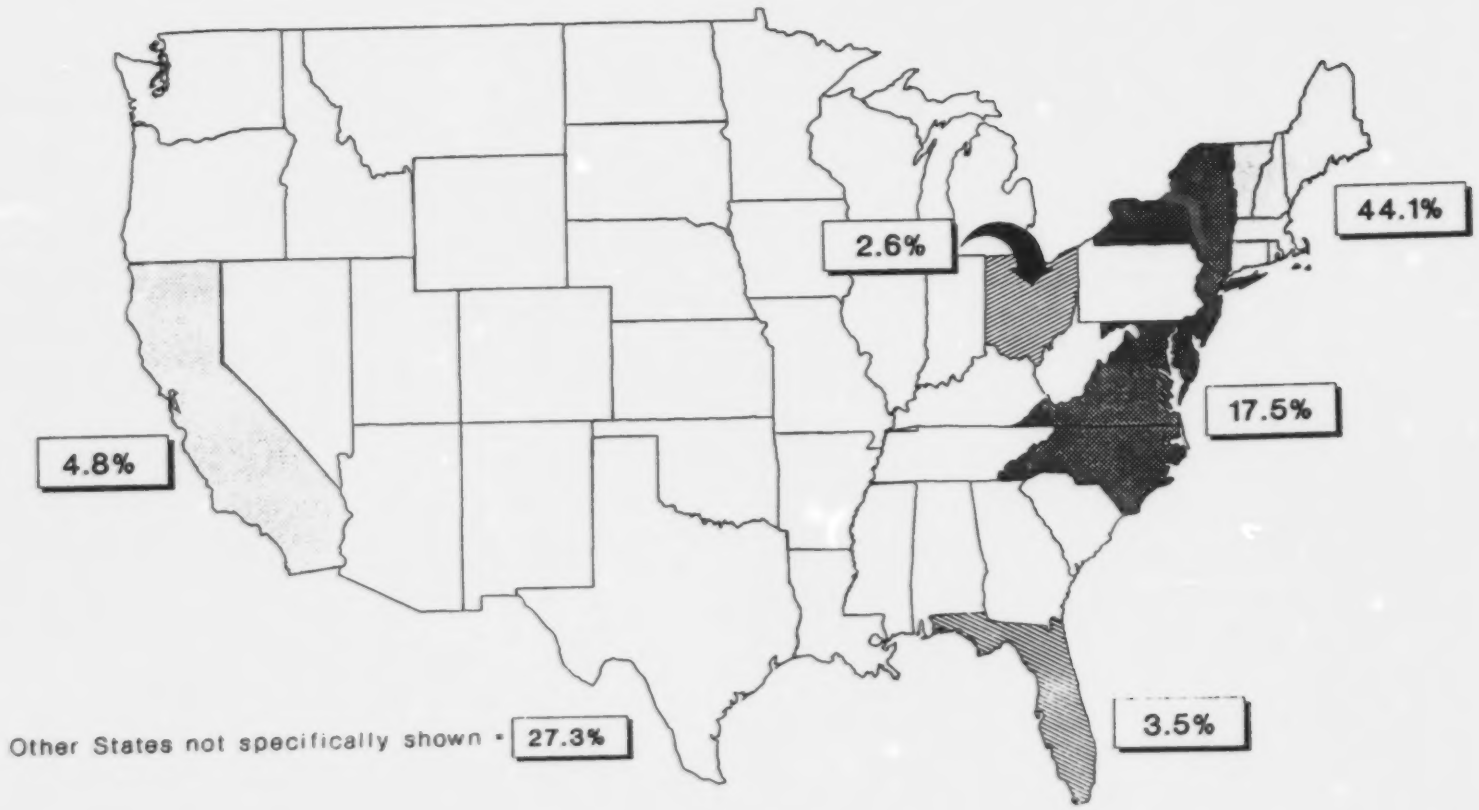


Source: Statistics Canada -Cdn. Questionnaire Survey -1989

FIGURE 3.9

ORIGIN of U.S. SURFACE TRIPS to N.B.

-by region



Source: NB Dept of Tourism, Recreation & Heritage
1989 Visitor Exit Survey June - October

FIGURE 3.10

Figure 3.11 distributes the 44.1 percent of trips originating from New England to each of the 6 individual states. As shown, the majority of those originate in the State of Maine, which accounts for 17.5 percent of all trips inbound to New Brunswick involving at least one night's stay. This figure is significantly less than the 65.2 percent of all outbound trips having been destined for Maine from New Brunswick as previously indicated. Again some of this can be attributed to shopping trips.

Massachusetts is the second most popular origin providing 13.7 percent of inbound surface trips to New Brunswick. Next is New Hampshire with 5.1 percent, Connecticut with 4.9 percent, while Vermont and Rhode Island combine for 2.9 percent of inbound trips. Surprisingly, California is the origin of almost 5 percent of surface trips to New Brunswick, while Florida generates 3.5 percent.

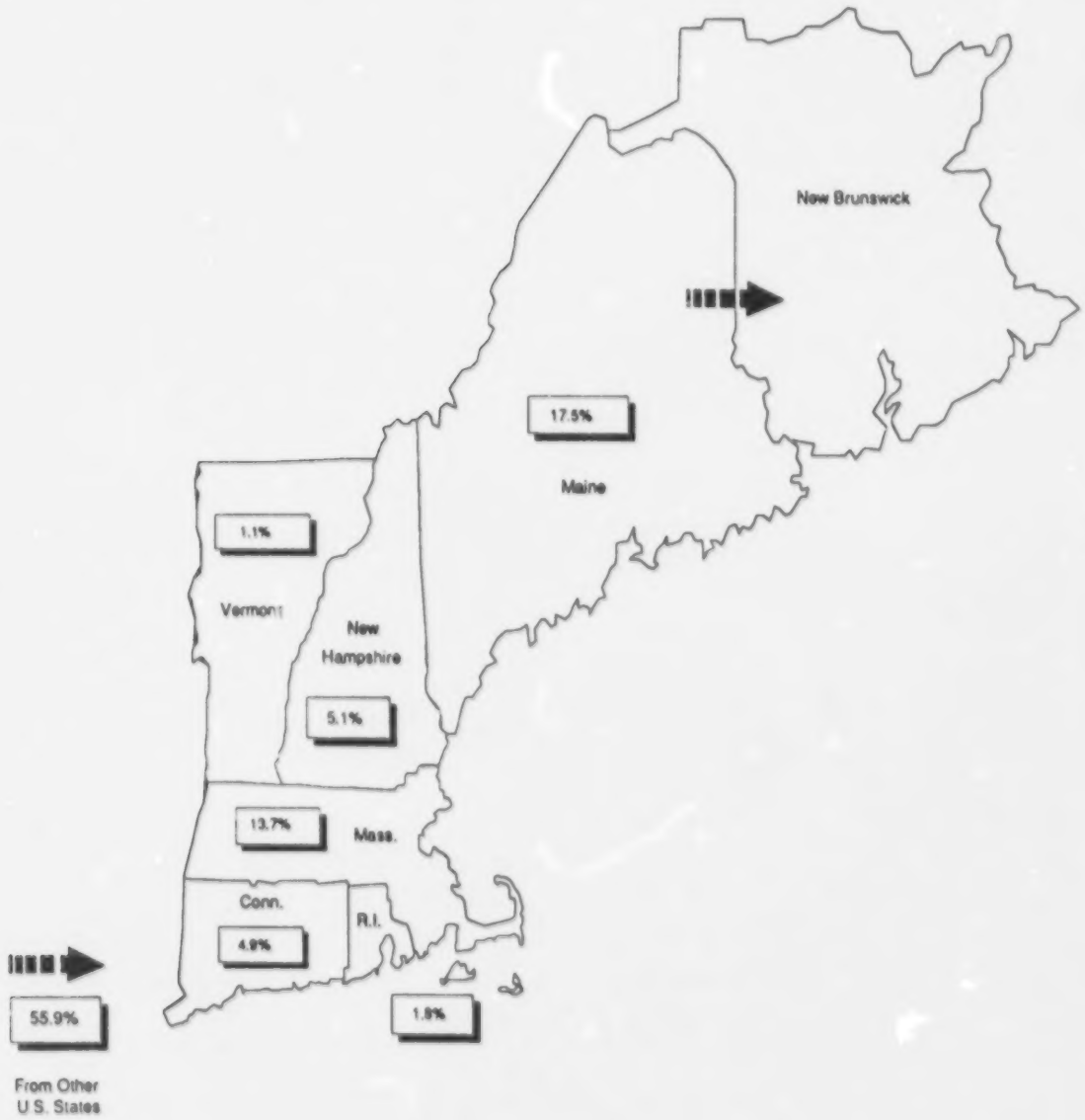
3.3.2.2.2 Seasonality

Since the 1989 Visitor Exit Survey was conducted from June through October, there were no reliable indications of the annual seasonality of visits by trip purpose. However, border crossing statistics were obtained from the New Brunswick Department of Transportation for 1989 on a monthly basis. The number of vehicles (not person-trips) entering Canada from the United States who stay for at least one night is segregated from total volumes. As shown in Figure 3.12, the seasonality of auto trips from the United States is almost identical to that shown in Figure 3.6 for outbound trips.

3.3.2.2.3 Trip Purpose

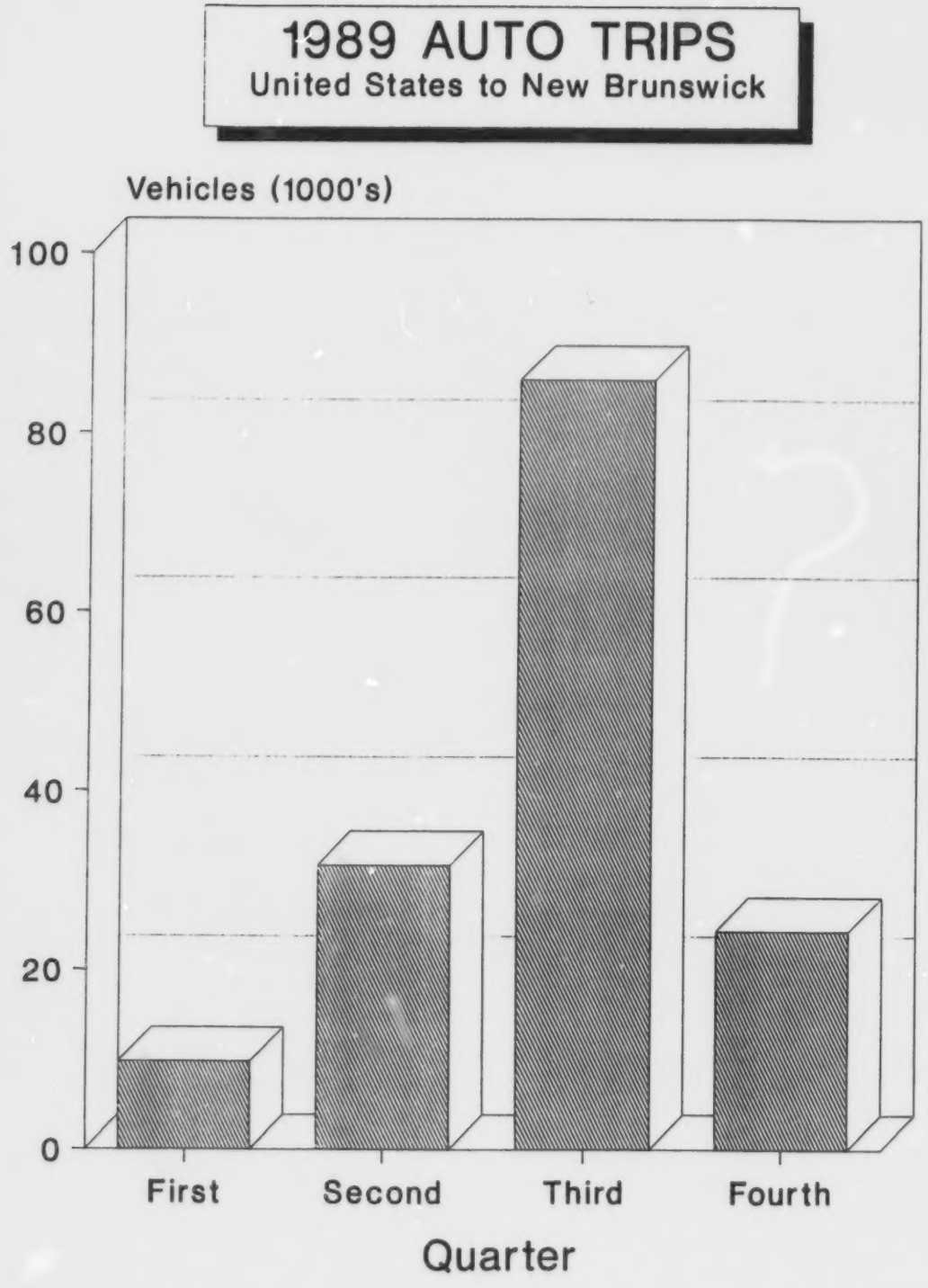
The trip purposes were determined with data extracted from the 1989 Visitor Exit Survey. As shown in Figure 3.13, trip purposes are generated by region of origin from within the United States. Pleasure trips were found to be the most popular reason for travelling to New Brunswick for all regions. However, caution should be used as it is recognized that these trip purposes are reflective of the tourist season and hence are probably biased favouring pleasure trips. Americans who were simply passing through were found to be the second most popular reason for travelling in New Brunswick.

ORIGIN OF U.S. SURFACE TRIPS TO N.B.



Note: Total New England Person-Trips by Auto=159,956 (1989)

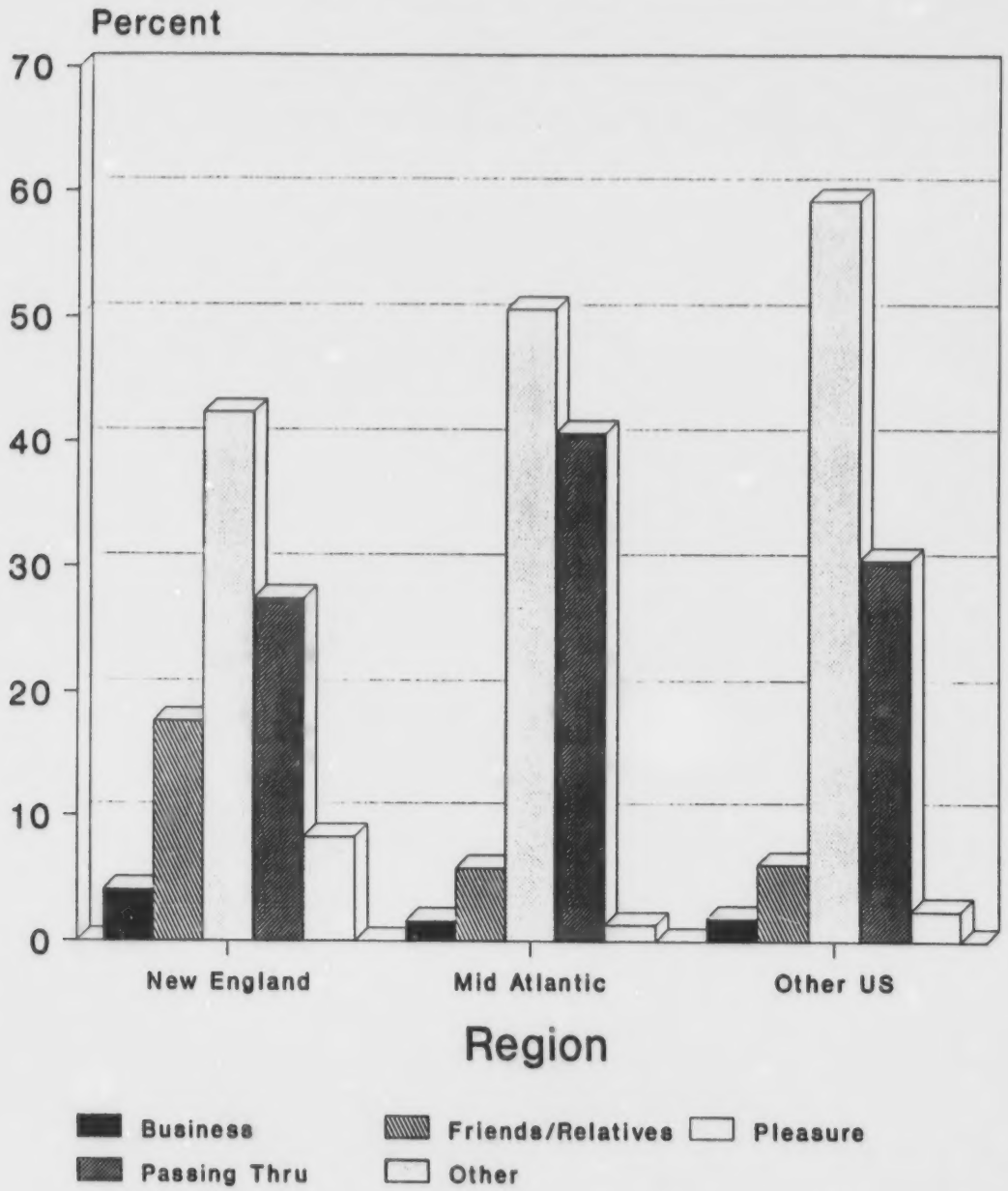
FIGURE 3.11



Source: N.B.D.O.T. Border Crossing Statistics -1989

FIGURE 3.12

Purpose of Surface Trip
(United States to New Brunswick)



Source: NB Dept of Tourism, Recreation & Heritage

1989 Visitor Exit Survey June - October

FIGURE 3.13

Business trips from New England accounted for 4.1 percent of all surface trips to New Brunswick in 1989. Visiting family and friends accounted for 17.7 percent of surface trips from New England, while passing through was responsible for 27.5 percent of all trips. While pleasure trips represented 42.4 percent of all trips, sightseeing was the single most common subcategory accounting for 17.9 percent of all road trips. Shopping, while grouped under the pleasure category, represented 2.8 percent of the reasons New Englander's had for driving to New Brunswick.

Business trips from other regions of the United States represented between 1.6 and 1.8 percent of all surface trips to New Brunswick. Pleasure trips represented 50.6 and 59.2 percent of all surface trips to New Brunswick from the mid-Atlantic and remaining states (other than New England), respectively. Seeing something new, was the most common subcategory identified under pleasure trips for those originating from points outside New England.

3.3.2.3 Summary

In reviewing surface travel between New Brunswick and the United States, it was found that for those 814,660 annual person-trips (one-way) which resulted in a stay for at least one night, almost 83 percent were made by automobile, while the remaining 17 percent were represented by air, bus and other modes. Air represented 3 percent of total person-trips. Thus the total annual transborder automobile market is 673,310 person-trips. It is this number of trips which potentially could be attracted to some type of transborder air service.

New Brunswick to the United States (One-Way Trips)

However, a more detailed look is required with respect to the trip purposes and distribution. Over 88 percent of the 310,600 New Brunswick person-trips (one-way) made by auto were to New England (273,640 person-trips) of which 65.2 percent were associated with Maine (202,510) and 8.9 percent (26,645) to Massachusetts. Almost 12 percent (36,960) were made to areas of the United States other than New England.

Business accounts for 7 percent of the 310,600 person-trips (one-way) made by auto, or 21,600 person-trips. Of this total, 14,100 are person-trips associated with the State of Maine while 1,925 auto person-trips were associated with

Massachusetts. In total, there were 7,500 person-trips made by auto to the United States, other than the State of Maine for the purpose of doing business. This 7,500 annual figure is a realistic potential for diversion to a new or improved air service.

Table 3.1 clearly revealed that Boston is probably the most realistic gateway for transborder service because of existing demand. This is further confirmed with the air and fare analysis completed and discussed further on in this report. Thus it would appear the 14,100 business person-trips (one-way) to Maine would be difficult to divert to an air service associated with Boston.

Reviewing other surface trips made for reasons of pleasure, vacation and personal, it was found that there were 100,525 person-trips (one-way) made from New Brunswick to the United States, other than the State of Maine, in 1989, with 1,735 person-trips made to Florida. It would appear reasonable to assume that a new or improved air service could potentially divert a significant portion of the Florida traffic, and perhaps some of the 100,525 person-trips made to destinations outside the State of Maine. However, because of the nature of the trip purpose, diversions would be difficult unless there is some significant cost incentive.

United States to New Brunswick (One-Way Trips)

It has been estimated that there were approximately 362,710 person-trips (one-way) made by Americans by auto to New Brunswick in 1989. When looking at trip purpose, business represents a very small part of these trips because the data were collected between June and October. If it is assumed that for a representative year business trips comprised 7 percent, the same as the New Brunswick travellers, then there were approximately 25,390 business person-trips made by surface modes to New Brunswick, 14,193 of which originated outside of New England, while 20,945 originated from areas other than Maine. Consequently, this represents a significant potential market which an improved or new air service could tap. Again, however, both service and fare advantages would have to be offered. The key lies in providing service to a U.S. gateway from which good connections to the hinterland can be achieved, in concert with consolidating air volumes from two or more New Brunswick origins.

With respect to other trip types, the remaining 93 percent of non-business surface trips were comprised of pleasure, visiting friends and relatives, passing through

and other. Passing through represented over 30 percent of all trips and thus would be difficult to divert to a New Brunswick air service. This leaves approximately 188,520 non-business person-trips (one-way) which are not associated with the State of Maine. It is possible some of these trips might be diverted, however, they would be more difficult than the business trips.

3.3.3 Chamber of Commerce Survey

Approach

Initially, a mail-out bilingual survey was conducted of the approximately 350 Atlantic Chamber of Commerce business members throughout the province in order to solicit information concerning work-related trips being made from different Maine airports. In addition, similar information was gathered concerning trips made by travellers originating from the United States to meet with the New Brunswick businesses. The individual completing the survey questionnaire was also asked to detail information concerning any non-business related transborder trips. The information gathered from this exercise supplements that previously presented in Sections 3.4.1 and 3.4.2. A copy of the questionnaire is presented in Appendix A.

Response

Questionnaires in both English and French were distributed province-wide to the approximately 350 chamber members through the Moncton office of the Atlantic Chamber of Commerce during the first week of February, 1991. Unfortunately, the initial rate of return was extremely low with only 19 questionnaires being completed within the following few weeks. Despite a follow-up letter sent to the Chamber members urging them to complete the questionnaire, a total of only 24 completed surveys were received. However, the New Brunswick Department of Commerce and Technology generously conducted a mail-out of the same questionnaire to businesses on its exporters list throughout the province in an attempt to bolster the quantity of input received from the business community. A further 80 questionnaires were received as a result of the Department of Commerce and Technology mail-out, for a total of 104 completed returns from New Brunswick businesses.

While 104 surveys were returned which detailed characteristics of 937 outbound work trips (one-way), 489 inbound work trips, and 126 pleasure trips, the survey should not be considered statistically significant. The general nature of the survey itself would inherently cause a biased response favouring those businesses who have either travelled to the United States, or those with a genuine interest in seeing the development of improved transborder services. Those not doing any travelling or not intending to, probably would not respond. Furthermore, a disproportionate quantity of surveys was received from the Moncton area because of the weighted distribution of questionnaires to this area which occurred. In fact, 47 (45 percent) surveys were received from the Moncton area, 19 (18 percent) from Fredericton, only 7 (7 percent) from Saint John, 4 (4 percent) from Grand Falls, 3 (3 percent) from Bathurst, and 24 (23 percent) from other areas throughout the province.

Mode

As previously mentioned, the responses contained information concerning 937 outbound transborder work-related trips. Of this total, 583 (62 percent) were via the air mode while the remainder of trips were by auto. Conversely, information for 489 business trips originating from the United States destined for New Brunswick was obtained. It was found that nearly 72 percent of business travellers coming from the United States to New Brunswick travel by air, while the remainder use an automobile. Of the 126 non-business related trips that information was obtained for, it was shown that only 45 percent are via the air mode, while the remaining 55 percent travel by auto.

Duration

Outbound business trips were found to last an average of 4.0 days, while those travelling from the United States stayed an average of only 2.6 days. Of interest was the finding that 37 percent of the businesses surveyed indicated that there were no trips made by individuals from the United States in conjunction with the operation of their business.

Non-business related trips made from New Brunswick to the United States were found to last for an average duration of 7.3 days.

Destinations of Business Trips

Common destinations of business related trips made from New Brunswick to the United States were determined from the survey responses. It was found that Boston represents the single most popular destination, attracting 25 percent of all transborder business trips. Not surprisingly, the State of Maine is the U.S. destination for a large proportion (30 percent) of all work trips. New York and Florida are the next most common destinations representing 7 and 5 percent of all trips, respectively. Philadelphia, Connecticut, and Chicago each represent destinations for 3 percent of New Brunswick travellers, while Washington/ Baltimore and Atlanta represent 2 percent each. Los Angeles was found to be the destination for 1 percent of all New Brunswick business trips, while the remaining 18 percent were distributed throughout various areas of the United States.

U.S. Origins of Business Trips

It was found that not only is Boston the single most popular destination for work related trips from New Brunswick, but not surprisingly, it is the most common origin of inbound trips. The State of Maine generates 28 percent of all business trips to New Brunswick, while the New York/New Jersey area is the origin for 12 percent. Finally, Chicago generated 10 percent of all inbound business trips, while the remaining 34 percent are scattered throughout the rest of the United States.

Destinations of Pleasure Trips

The majority of respondents indicated that Florida was the preferred destination, representing 34 percent. Maine attracted 29 percent, which is not surprising given its proximity. Both Boston and New Hampshire were found to represent 6 percent of all outbound pleasure trips, while the New York/New Jersey area was the destination for 5 percent of those from New Brunswick. Vermont and Connecticut were the destination for 3 and 1 percent of all pleasure trips, respectively, while the remaining 17 percent is distributed throughout the remainder of the United States. Not surprisingly, other than Florida, the majority of transborder pleasure trips are to the New England States because of their proximity to New Brunswick.

Potential for New or Improved Service

Each of the respondents were asked whether individuals from their company would potentially use a new or improved service between New Brunswick and New England. Nineteen percent indicated that they would not use it. Of the 81 percent (84 respondents) who indicated that they would use a new or improved service, it was estimated that 656 one-way trips would be made annually, an average of nearly 8 trips per respondent. However, the use of any potential service was qualified. Over 60 percent of those who said they would use the service would only do so if it were less expensive and offered better service. Cost was the only consideration for nearly a quarter of those who would use it, while nearly 15 percent would use it if service were better, regardless of price.

3.3.4 Summary of Current Demand

A summary of 1989 person-trips between New Brunswick and the United States is presented in Table 3.3. The data are exclusive of the numerous same day local surface trips which constantly occur between border communities. As shown, there were an estimated 825,488 transborder person-trips (one-way) which occurred in 1989, 3 percent of which were via the air mode.

Not surprisingly, the proportion of air passengers travelling on business by air (35 percent), was found to be significantly higher than for the proportion using a surface mode (7 percent).

The seasonality of air trips peaks during the first quarter (with nearly 15,000 trips), while the third quarter represents the lowest demand for air services (with just over 10,000 trips). In contrast, the third quarter represents by far the most popular period for surface travel both to and from the United States, while the first quarter is the least popular.

Although the total travel market is 825,488 person-trips (one-way) annually, it would be unrealistic to assume that there is potential to capture all of these trips. Presently, approximately 18,400 transborder air trips (one-way) are utilizing Montreal, Toronto and Halifax as the gateway to the U.S. As will be shown later, there is potential to divert some of these trips to a New Brunswick based transborder air service.

TABLE 3.3

SUMMARY OF TRANSBORDER PERSON-TRIPS
(NEW BRUNSWICK/UNITED STATES)

Mode	1989 2-Way Volume	1989 1-Way Volume	Trip Purpose	
			Business	Non-Business
AIR				
Scheduled Service	51,327	25,664	35%	65%
Charter Service	608[1]	304	—	100%
SURFACE AUTO TRIPS				
Outbound from N.B.		310,600	7%	93%
Inbound from U.S.		362,710	7%	93%
		673,310		
OTHER		126,210	7%	93%
TOTAL		825,488		

[1] 1988 Volume.

The greatest potential for diverting surface trips is with respect to business oriented auto trips. There are approximately 7,500 person-trips (one-way) made on business by auto to areas of the United States other than Maine from New Brunswick. Business oriented person-trips by auto from the United States (other than the State of Maine) to New Brunswick were 20,945 in 1989. Thus there is a total 28,445 business person-trips which are being made by auto between New Brunswick and the United States. The State of Maine has been taken out of this figure because of the shorter driving distances and the fact that Boston appears to be the most realistic gateway to the United States for either establishing a new service or improving the existing one. This is addressed later.

A new or improved service could potentially capture some of the 28,445 business person-trips (one-way) made annually by auto. It would be essential that such a service be competitive both from a service and fare point of view.

By far the majority of surface auto trips made are non-business oriented and primarily relate to pleasure, visiting friends and relatives, and personal. It would

be very difficult to divert any significant number of these trips. Evaluating the feasibility of improving or establishing a new service should not rely on these types of trips for any measurable amount.

3.4 Forecast of Future Demand

The Air Statistics and Forecast Branch of Transport Canada has developed a series of analytical models used for long-term forecasting of air traffic activity at Canadian airports. Primarily based on socio-economic inputs, the models generate estimates of passengers, cargo, and aircraft movements which aid planners with the management of ground and airside facilities.

The Passenger Origin-Destination Model (PODM) is disaggregated by sector (domestic, transborder, and other international), trip purpose (business, non-business, "sunspot" trips), and direction of travel (inbound or outbound). The model divides Canada into 60 zones while the U.S. is divided into 23 zones. It is not possible to obtain forecasts of volumes for specific city pairs between New Brunswick and the United States, however projected traffic and corresponding growth rates between the Maritime Provinces and the larger U.S. cities have been generated. Furthermore, aggregated annual trips between the U.S. as a whole and specific New Brunswick cities have been derived based on past market shares.

After specific runs were performed with the model to segregate the Maritime zone passenger forecasts to the U.S., it was found that an annual growth rate of 5.6 percent is projected for total movements between the two areas for the years 1987-1998. The second target year of 2003 resulted in a projected annual growth rate of 5.0 percent between 1987-2003. These rates are higher than the 4.3 and 4.1 percent projected for all types of aviation traffic at Canadian airports for the same respective target periods. The projections indicate that the New Brunswick transborder air market is expected to grow more rapidly than the overall total air market.

Further specific segregation of the model's output yielded annual growth rates between the Maritimes and markets such as Florida, Boston, and New York (which collectively account for approximately 80 percent of U.S. destinations). Table 3.4 summarizes the projected annual growth rates.

TABLE 3.4

ANNUAL GROWTH IN AIR PASSENGER VOLUMES
DEVELOPED BY PODM

	1987-1998 %	1987-2003 %
Maritimes to/from the U.S.	5.6	5.0
Maritimes to/from New York	5.5	4.9
Maritimes to/from Boston	5.9	5.3
Maritimes to/from Florida	4.7	4.4

Transport Canada also expresses projected growth rates in terms of low and high growth scenarios. The basis for either scenario is an array of economic assumptions pertaining to both the U.S. and domestic markets. Latest analyses performed by Transport Canada have resulted in overall average annual growth rates of 2.9 percent for the low growth scenario, 4.1 percent for a base case, and 5.2 percent for a high growth scenario. While these rates are only reflective of overall trends, it can be assumed that the same relative proportions are applicable to the transborder rates for the Maritimes. This results in an annual growth rate of 4.0 percent for the low growth scenario for the years 1987 - 1998, and a rate of 7.1 percent for the high growth scenario. Similarly, growth rates of 3.5 percent and 6.3 percent were used for the forecast period 1987 - 2003 for the low and high growth scenarios, respectively. The total transborder air trips for New Brunswick are plotted up to a 1989 base year as shown in Figure 3.14. Projected from the base year to the target years of 1998 and 2003 are the three growth scenarios. As shown, the total annual transborder air trips can be expected to nearly double, given the average growth scenario, by the year 2003. The low growth scenario will result in an increase of 63 percent for the same period, while the high growth scenario will see volumes increase by 137 percent.

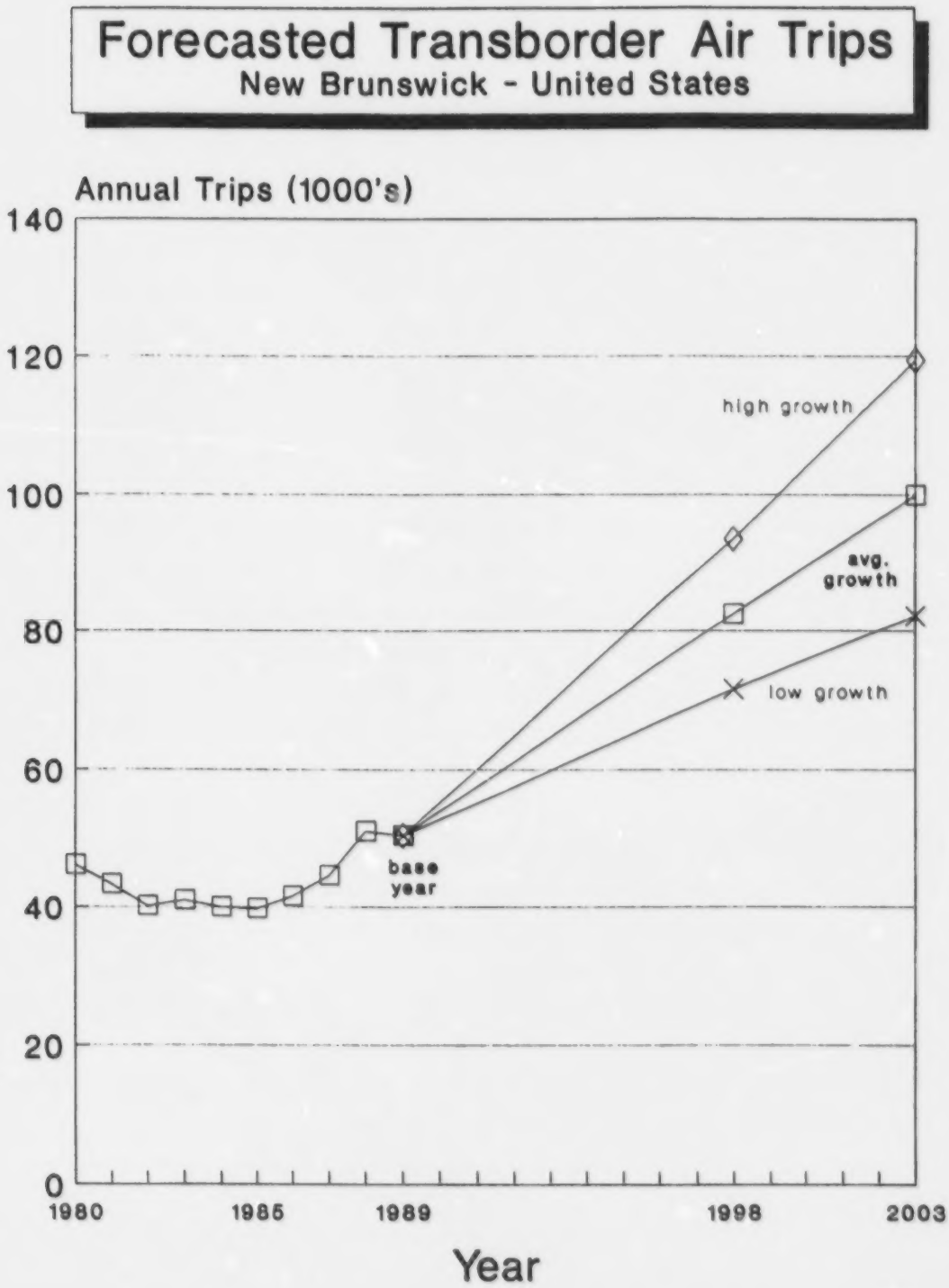

Forecasted Transborder Air Trips
New Brunswick - United States
Annual Trips (1000's)
140
120
100
80
60
40
20
0
high growth
avg. growth
low growth
base year
1980
1985
1989
1998
2003
Year

FIGURE 3.14

3.5 Identification of Deficiencies in Current Service

3.5.1 Service Analysis

The potential demand which will utilize an air service from New Brunswick to New England will be comprised of three components: 1). diversion of demand from existing routings over Montreal, Toronto and Halifax hubs, 2). diversion of existing surface traffic to the air mode, and 3). stimulation of new demand. In order to assess the potential for diversion of existing traffic from present services, it is necessary to scrutinize both deficiencies in service and fare to New England destinations and points beyond.

Appendix B contains summaries of ingoing and outgoing flight information for the U.S. destinations of Boston, New York, Tampa, Miami, Chicago, and Los Angeles from Fredericton, Saint John, and Moncton. Information for variables such as total travel time, stop-over time, number of stops, number of connections, fares (J, Y, B, H, and V classes), departure and arrival times, aircraft types, and airline have been recorded for the most probable 3 or 4 itineraries for each city pairing. The fare classes J, Y, B, H, and V represent business, regular economy, first level discount, second level discount and deep level discount, respectively. Travel agent representatives were used to compile this information and were asked to supply the most popular and probable routings presently available. The tabulation of this information enabled deficiencies in existing services to be identified on a city-pair basis. Each city-pair is described below and reference should be made to Appendix B when reading these descriptions.

There are approximately 860 transborder air trips associated with northern New Brunswick airports, in particular Chatham and Charlo. Prior to completing the service analysis, it was agreed by the Study Steering Committee these northern airports could be excluded from the detailed service analysis. It would be appropriate, however, to briefly describe existing transborder air services which are presently available to these northern communities.

Charlo, Bathurst and Chatham passengers presently access U.S. destinations from Montreal and/or Toronto. All three communities have two flights daily to and from Montreal. From Montreal and/or Toronto, these passengers have similar

service as Fredericton, Saint John and Moncton, although delays are greater because of the scheduling of the northern New Brunswick - Montreal leg.

3.5.1.1 Fredericton

Many of Fredericton's transborder air services are routed through either Montreal or Toronto. However, most U.S. destinations discussed below are reached with only a single connection required at either Montreal or Toronto. It is this level of service a New Brunswick transborder service would have to compete with, in addition to cost.

Fredericton - Miami

The most probable routing for air service between Fredericton and Miami is via Air Canada/Air Nova exclusively. Good outbound morning service is offered on Air Nova with only one stop in Montreal with a minimum 50 minute stop-over time. Furthermore, good outbound service exists for an evening departure, with a single 72 minute stop-over in Toronto. Afternoon service is less desirable with stops in Saint John and Toronto and a total travel time of 473 minutes, over two hours longer than morning or evening flights to Miami.

Inbound service is not as efficient as outbound. A morning return flight from Miami stops in both Montreal and Saint John. A mid-afternoon service makes only one stop in Montreal, however there is a stop-over time of 162 minutes, well in excess of the 60 minute minimum recommended for transborder flights.

Fredericton - Tampa

Good outbound air service exists for a morning departure. A single connection is made in Montreal with a stop-over time of 55 minutes. The only other regular service is a noon departure with has a single stop in Toronto, but requires over a three hour stop-over time. There is no evening departure for Tampa.

All inbound service from Tampa requires either a late morning or early afternoon departure, however all have large stop-over times in either Montreal or Toronto of 163 minutes or more. Again, most probable routings would be via Air Canada/ Air Nova exclusively.

Fredericton - New York

Outbound service to Laguardia Airport is best served by Air Canada. Both morning and evening services are routed with one stop in Montreal and each has large stop-over times of 194 and 160 minutes, respectively.

Inbound service from Laguardia is again provided by Air Canada with stops in either Toronto or Montreal. Morning service, departing at 9:20 a.m., is routed through Toronto, however with an additional stop in Saint John, total travel time is increased to 391 minutes which provides only a 4:51 p.m. arrival time. Mid-afternoon inbound service requires nearly a five-hour layover in Montreal. Evening service is perhaps the most efficient return routing with a 110-minute layover in Toronto, however, a total travel time of just over 6 hours is still considered excessive.

Although outbound same day service is possible it results in only 4 1/2 hours in New York, exclusive of terminal time. Inbound same day service is not available.

Fredericton - Boston

Fredericton - Boston service is in most cases extremely circuitous, always involving a connection in Halifax with further outbound stops usually in both Saint John and Moncton or inbound stops at both Yarmouth and Saint John. The resulting service yields total travel times ranging from 235 to 455 minutes which is large in contrast with direct flying times of approximately 90 minutes from Saint John. In fact, a travel time of 455 minutes would be comparable to that required to drive from Fredericton to Boston. Most service is turbo-prop DASH 8 with the exception of an 11:00 a.m. departure and a 10:15 a.m. return via Air Canada/Air Nova.

Same day weekday return service is not practically available, however, by driving to Saint John and flying with Air Atlantic it is possible. This results in at least a 14 hour work day.

Fredericton - Chicago

The best morning outbound service to Chicago is via Air Canada with one connection in Toronto and a layover time of only 60 minutes. The latest outbound departure time of 12:45 p.m. requires only one connection in Montreal, however, a stop-over time of 155 minutes increases the total travel time to just under 7 hours.

All inbound service from Chicago is degradated by long stop-over times in either Toronto or Montreal ranging from 163 to 295 minutes. The earliest arrival time is 4:53 p.m. and no evening departure service is available.

Fredericton - Los Angeles

There presently exists good morning and evening outbound service to Los Angeles from Fredericton via Air Canada. Both services require a single connection in Toronto with stop-over times of 80 and 62 minutes, respectively.

Inbound service is most effective via Air Canada's 7:50 a.m. departure or with Canadian's 6:48 a.m. departure from Los Angeles. Each service requires two connections before the Fredericton destination is reached. Two connections results in stop-over times of 172 and 289 minutes for each respective service, which are high. Arrival times in Fredericton for the Air Canada and Canadian service are at 9:15 p.m. and 10:50 p.m., respectively.

3.5.1.2 Saint John

As with most of New Brunswick's transborder service, much of Saint John's service is hubbed through either Montreal or Toronto, however, routings are frequently required to stop in Fredericton. The following discussion applies to services routed through Montreal or Toronto, however, some of the 15,772 two-way passengers travelling to Boston using Saint John's direct service are making connections with U.S. carriers for points beyond. These volumes are not considered potentially divertible to a proposed new service.

Saint John - Miami

Good outbound morning and evening air service presently exits from Saint John to Miami with Air Canada, although, one stop is required in Fredericton followed by a connection in either Montreal or Toronto. Stop-over times for the morning and late afternoon service are kept to a minimum at only 50 and 72 minutes, respectively. Furthermore, a mid-afternoon outbound service is available which does not require a stop in Fredericton but still connects in Toronto.

Inbound morning service from Miami to Saint John is provided by a single connection in Toronto with no further stops. Afternoon service requires a connection in Montreal with a 162 minute delay, and a further stop in Fredericton.

All probable routings between Saint John and Miami are best served exclusively by Air Canada.

Saint John - Tampa

Morning outbound service to Tampa from Saint John requires a stop in Fredericton before a connection is made in either Montreal or Toronto. The routing over Toronto requires a 165 minute stop-over while the Montreal routing only necessitates a 55-minute delay. The latest departure leaves Saint John at 1:00 p.m. and stops in Toronto for over 3 hours.

Both probable inbound routings from Tampa to Saint John require a connection in either Montreal or Toronto with a further stop in Fredericton. Stop-over times in Montreal or Toronto are 163 and 175 minutes, respectively.

Saint John - New York

All inbound and outbound services between Saint John and Laguardia Airport require at least two stops, usually one connection in Montreal coupled with a further stop in Fredericton. Stop-over times at the connecting airports range from 160 to 245 minutes for both inbound and outbound services. Same day service is not practically provided.

Saint John - Boston

The most probable routing from Saint John to Boston is via Air Atlantic's direct service, available two times daily using DASH 8 turbo-prop aircraft. Alternative routings are also available with Air Canada/Air Nova, however, a connection is required in Halifax, with most flights stopping further in Yarmouth. Total travel times for routings through Halifax range from 240 to 272 minutes compared with only 90 to 95 minutes for direct service with Air Atlantic. Same day service is available using direct service offered by Air Atlantic from Saint John to Boston. A business traveller can be in Boston at 9:40 a.m. with return service at 4:40 p.m. However, realistic same day service is not possible for those originating from Boston since the earliest arrival in Saint John is not until 12:40 p.m. with the latest departure at 3:25 p.m., providing a window of less than three hours, exclusive of terminal time.

Saint John - Chicago

The best morning and late-afternoon service to Chicago requires a connection in Toronto as well as a stop at Fredericton, however connection times are kept to a minimum of 60 and 77 minutes respectively. Return services are plagued by delays ranging from 211 to 295 minutes at connecting airports.

Saint John - Los Angeles

As with most of the Saint John routings to the U.S., service to Los Angeles requires at least one connection in either Montreal or Toronto as well as an intermediate stop in Fredericton. Outbound service provides for both morning and evening departures with reasonable stop-over times of 80 and 62 minutes in Toronto. Due to the time difference, only a morning departure is practical for the return service. The inbound routing requires connections in both Toronto and Montreal resulting in almost 3 hours of delay.

3.5.1.3 Moncton

Moncton - Miami

Good service presently exists for the Moncton - Miami city pair. Outbound service is available for a morning, noon, and evening departure with single connections at either Montreal or Toronto. Reasonable outbound layover times range between 71 and 96 minutes.

Return service is also relatively convenient with single connections in Montreal or Toronto resulting in stop-over times ranging between 72 and 97 minutes.

Moncton - Tampa

Again, good service exists for the city-pair of Moncton and Tampa, however all probable routings are through connections in either Montreal or Toronto. Stop-over times range from 85 to 98 minutes with the exception of weekend return service which has an increased layover time of 201 minutes.

Moncton - New York

Most reasonable outbound service from Moncton to New York is routed through Montreal via Air Nova/Air Canada. Both good morning and evening service exists. Early morning service departing at 7:05 a.m. results in arrival time of 10:35 a.m. (local) at Laguardia. However, return service is affected by either two stops or excessive stop-over times in Montreal or Toronto. Furthermore, there is presently no reasonable late-afternoon or evening return routings from Laguardia Airport.

Moncton - Boston

Outbound service from Moncton to Boston either requires 2 or more stops or results in stop-over times upwards of 3 hours in Halifax. All probable routings are through Halifax and all but one outbound itinerary involves the use of DASH 8 turbo-prop aircraft. The earliest arrival time available in Boston is not until 12:16 p.m. which negates the possibility of any same day service.

Inbound service from Boston to Moncton is exclusively via Halifax, with most routings making an additional stop in either Yarmouth or Saint John. However, an evening service does exist which only stops once in Halifax for a connection with an Air Nova flight. The earliest inbound service does not leave Boston until 10:15 a.m. and with a stop-over time of 94 minutes in Halifax, does not arrive in Moncton until 2:40 p.m.

Moncton - Chicago

Outbound service to Chicago from Moncton is generally provided with a connection in Toronto. Good evening service exists with a stop-over time of only 66 minutes in Toronto. However, no reasonable morning itineraries exist. Canadian Airlines' service departing at 9:50 a.m. requires two connections resulting in almost 7 hours layover time in Toronto and Halifax.

Both of Air Canada's inbound services from Chicago make connections in Toronto with stop-over times of 211 and 216 minutes. Canadian Airlines' service connects in both Toronto and Halifax before ultimately reaching Moncton. All inbound services result in total travel times of 409 minutes or more in comparison with only 213 required for evening outbound service.

Moncton - Los Angeles

An evening outbound service from Moncton to Los Angeles connects in Toronto with a minimal stop-over time of only 61 minutes. However, noon service requires stops in Montreal and Chicago resulting in 215 minutes of delay and an arrival time only 35 minutes earlier than the 5:00 p.m. departure.

Return service on Air Canada requires only a single stop in Toronto, however the stop-over time is nearly four hours. Inbound service via Canadian Airlines requires connections in both Chicago and Montreal with a further stop in Halifax.

3.5.2 Air Fare Analysis

Referring once again to Appendix B, five fare classes are listed for each individual city-pair. Fare classes include: Business (J), Regular Economy (Y), 1st Level Discount (B), 2nd Level Discount (H), and Deep Level Discount (V). These fares

are applicable for the given service, assuming an April 1, 1991 departure. All figures shown are base fares which are exclusive of the Air Transportation Tax, the Goods and Services Tax, and U.S. Immigration Fees and Taxes.

Recent research conducted by the Transportation Group at the University of New Brunswick has resulted in the development of an air fare pricing model which estimates the existing ticket fare on the basis of 2-way distances between the given city-pair. The model was calibrated using several hundred examples of domestic fares between Canadian city pairs. The R-squared value of the model was determined to be over 97 percent, indicative of an extremely accurate model predictability. However, since the model was only generated for domestic city-pairs it was necessary to modify the regression equation to account for extraneous charges such as the U.S. Tax and U.S. Immigration Fee levied on all transborder air fares. The modified pricing model was then applied to all of the New Brunswick - United States city pairs under study to determine if existing fares that are being charged are over or underpriced relative to the model. Instances where excessive fares are found would then be indicative of a window of opportunity on a cost-basis for alternate air service.

The results of the comparative analysis are shown on Table 3.5 by city-pairings. The fares shown are regular economy fares without any taxes. As shown, the fares predicted by the regression model are on the most part, relatively accurate. Notable exceptions include the destinations of Chicago, Los Angeles, and New York (if routed through Montreal). In these instances it is indicated that the actual fares being charged exceed those determined on the basis of the actual mileage between the city-pair. Of note, is the result showing that the fares being charged out of Saint John to Boston are relatively close to those predicted by the model, however for Fredericton and Moncton origins, fares to Boston seem to be 15 to 18 percent higher than what might be expected. It appears that given a direct service to Boston from Saint John, the fares are being dictated by the overall shorter stage length than for routings through Halifax. The absence of direct service out of Fredericton and Moncton to Boston seems to be resulting in higher fares being levied.

Although the model's capability of predicting transborder air fares rather than domestic is to a large part untested, it does give an initial indication that fares for destinations such as Los Angeles, Chicago, New York, and in some cases, Boston,

TABLE 3.5

Regression Analyses of 1991 Transborder Fares

City Pair	Via	1-way stat. mi.	2-way km.	Regress. Equation	Existing Fares	Percent Difference
YFC-MIA	YUL	1777	5732	$1,067.66	$1,052.00	1.5
	YYZ	1899	6126	$1,126.38	$1,052.00	6.6
YFC-TPA	YUL	1662	5361	$1,012.31	$960.00	5.2
	YYZ	1761	5681	$1,059.96	$960.00	9.4
YFC-LGA	YUL	685	2210	$542.10	$766.00	-41.3
	YYZ	1030	3323	$708.14	$766.00	-8.2
YFC-BOS	YHZ	570	1839	$486.75	$574.00	-17.9
YFC-ORD	YUL	1101	3552	$742.31	$918.00	-23.7
	YYZ	1099	3545	$741.35	$918.00	-23.8
YFC-LAX	YUL,ORD	2848	9187	$1,583.12	$1,900.00	-20.0
	YYZ	2834	9142	$1,576.38	$1,900.00	-20.5
YSJ-MIA	YUL	1811	5842	$1,084.03	$1,052.00	3.0
	YYZ	1921	6197	$1,136.97	$1,052.00	7.5
YSJ-TPA	YUL	1704	5497	$1,032.53	$960.00	7.0
	YYZ	1783	5752	$1,070.55	$960.00	10.3
YSJ-LGA	YUL	734	2368	$565.68	$768.00	-35.8
YSJ-BOS	DIRECT	327	1055	$378.00	$412.00	-9.0
	YHZ	528	1703	$466.54	$412.00	11.7
YSJ-ORD	YYZ	1121	3616	$751.94	$928.00	-23.4
YSJ-LAX	YYZ	2856	9213	$1,586.97	$1,924.00	-21.2
YQM-MIA	YUL	1855	5984	$1,105.20	$1,068.00	3.4
	YYZ	1984	6400	$1,167.29	$1,068.00	8.5
YQM-TPA	YUL	1748	5639	$1,053.71	$974.00	7.6
	YYZ	1846	5955	$1,100.87	$974.00	11.5
YQM-LGA	YUL	778	2510	$586.86	$712.00	-21.3
YQM-BOS	YHZ	511	1648	$458.51	$524.00	-14.3
YQM-ORD	YYZ	1184	3819	$782.26	$956.00	-22.2
YQM-LAX	YUL	2908	9381	$1,611.99	$1,942.00	-20.5
	YYZ	2919	9416	$1,617.29	$1,942.00	-20.1

are on average higher than might be justified strictly from a stage length perspective.

The next step in the fare analysis is to compare existing fares from New Brunswick origins to U.S. destinations, with fares from a potential U.S. gateway to the same destinations. Potential gateways for air service to New England which were considered in the fare analysis include Presque Isle, Bangor, Portland, and Boston.

Fares from each city pair were compared with fares from each U.S. gateway to the same destinations and are detailed in Appendix C. For example, fares for service between Fredericton and Miami were compared with fares for service between Presque Isle and Miami, Bangor and Miami, Portland and Miami, and Boston and Miami. The differences determined between the fares for a Fredericton origin and those originating from a New England gateway provide the maximum amount that could be charged for service from Fredericton to the gateway to be competitive on a cost basis. To further clarify, consider the following example: an economy class fare from Fredericton to Miami (two-way) costs a total of $1,181.20 (including all taxes), while the same class fare from Bangor to Miami costs $1,058.14 (cdn). The difference ($1,181.20 - $1,058.14 = $123.06) then becomes the maximum two-way fare that could be charged for a proposed air service from Fredericton to Bangor to connect with service to Miami and still be competitive on a cost-basis.

Having completed this comparative analysis, the maximum available fares were then listed for each potential New England gateway as shown in Tables 3.6 through 3.9. For example, Presque Isle is listed with fare differentials from Fredericton, Saint John, and Moncton for the popular U.S. destinations previously identified. In some instances it was found that a "negative" amount would have to be charged to be competitive. In other words, it is less expensive to fly from Saint John to Boston in economy class than it is to travel from Presque Isle to Boston.

In reviewing the fare differential sheets for each U.S. gateway the following points are discovered. In general, the fare differentials which can be charged for a proposed service to any one of the gateways are in most cases much too low to support a service on a cost basis only. In most cases, it can be observed that the fare differentials are quite low (if not negative) for the business and economy class fares, while the deeper discount fares, in some cases, do provide substantial opportunity. However, recognizing the fact that the number of deeper discount

Table 3.6

PRESQUE ISLE GATEWAY
ROUND TRIP FARE DIFFERIENTIALS

U.S. Dest.	Fare Class	New Brunswick Origin		
		FREDERICTON	SAINT JOHN	MONCTON
Miami	J			
	Y	$104.46	$104.46	$121.58
	B	$130.17	$130.17	$190.09
	H			
	V	$197.28	$197.28	$207.98
1989 Pax		680	850	1720
Tampa	J			
	Y	$6.02	$6.02	$21.00
	B	$73.64	$73.64	$131.42
	H			
	V	$152.01	$152.01	$160.57
1989 Pax		1770	3950	5490
New York	J			
	Y	$217.04	$219.18	$159.26
	B	$116.00	$124.56	$87.11
	H	$63.12	$66.55	$27.63
	V	$75.00	$75.00	$25.77
1989 Pax		1100	1440	1660
Boston	J			
	Y	$146.48	($28.10)	$92.98
	B	($44.84)	($133.00)	($51.71)
	H	($9.44)	($57.52)	$30.63
	V	($51.12)	($36.24)	($13.34)
1989 Pax		1054	15772	4521
Chicago	J			
	Y	($90.09)	($79.39)	($49.43)
	B	$133.28	$141.84	$156.82
	H	$85.67	$91.02	$99.58
	V	$41.19	$41.19	$41.19
1989 Pax		540	600	730
Los Angeles	J			
	Y	$174.61	$200.29	$219.55
	B	$353.52	$368.50	$374.92
	H	$294.23	$303.86	$304.93
	V	$251.60	$251.60	$251.60
1989 Pax		370	620	850

Note: Numbers in (parentheses) are negative.

Table 3.7

BANGOR GATEWAY
ROUND TRIP FARE DIFFERIENTIALS

U.S. Dest.	Fare Class	New Brunswick Origin		
		FREDERICTON	SAINT JOHN	MONCTON
Miami	J	($679.61)	($679.61)	($658.21)
	Y	$123.06	$123.06	$140.18
	B	$260.40	$260.40	$320.32
	H			
	V	$292.62	$292.62	$303.32
1989 Pax		680	850	1720
Tampa	J	($707.36)	($707.36)	($690.24)
	Y	$33.92	$33.92	$48.90
	B	$98.06	$98.06	$155.84
	H			
	V	$238.05	$238.05	$246.61
1989 Pax		1770	3950	5490
New York	J			
	Y	$214.71	$216.85	$156.93
	B	$166.00	$174.56	$137.11
	H	$102.65	$106.09	$67.16
	V	$42.44	$42.44	($6.79)
1989 Pax		1100	1440	1660
Boston	J	($55.36)	($228.70)	($108.86)
	Y	$199.97	$25.39	$146.47
	B	$36.55	($51.60)	$29.68
	H	$28.93	($19.15)	$69.01
	V	$50.04	$64.93	$87.82
1989 Pax		1054	15772	4521
Chicago	J	($477.51)	($464.67)	($432.57)
	Y	($38.92)	($28.22)	$1.74
	B	$187.93	$196.49	$211.47
	H	$82.18	$87.53	$96.09
	V	$38.86	$38.86	$38.86
1989 Pax		540	600	730
Los Angeles	J	($301.35)	($275.67)	($252.13)
	Y	$353.68	$379.36	$398.62
	B	$408.17	$423.15	$429.57
	H	$346.55	$356.18	$357.25
	V	$306.25	$306.25	$306.25
1989 Pax		370	620	850

Note: Numbers in (parentheses) are negative.

Table 3.8

PORTLAND GATEWAY
ROUND TRIP FARE DIFFERIENTIALS

U.S. Dest.	Fare Class	New Brunswick Origin FREDERICTON	SAINT JOHN	MONCTON
Miami	J	($581.94)	($581.94)	($560.54)
	Y	$143.99	$143.99	$161.11
	B	$280.17	$280.17	$340.09
	H			
	V	$304.25	$304.25	$314.95
1989 Pax		680	850	1720
Tampa	J	($691.08)	($691.08)	($673.96)
	Y	$61.83	$61.83	$76.81
	B	$113.18	$113.18	$170.96
	H			
	V	$249.68	$249.68	$258.24
1989 Pax		1770	3950	5490
New York	J	$63.48	$65.62	$1.42
	Y	$270.53	$272.67	$212.79
	B	$264.84	$273.40	$235.95
	H	$201.49	$204.93	$166.00
	V	$134.30	$134.30	$85.07
1989 Pax		1100	1440	1660
Boston	J	$77.20	($96.14)	$23.70
	Y	$353.46	$178.88	$299.96
	B	$248.18	$160.02	$241.31
	H	$181.26	$133.17	$221.33
	V	$140.74	$155.62	$178.52
1989 Pax		1054	15772	4521
Chicago	J	($414.72)	($401.88)	($369.78)
	Y	$188.98	$199.68	$229.64
	B	$217.00	$225.56	$240.54
	H	$144.97	$150.32	$158.88
	V	$66.77	$66.77	$66.77
1989 Pax		540	600	730
Los Angeles	J	$500.98	$526.66	$550.20
	Y	$793.21	$818.89	$838.15
	B	$408.17	$423.15	$429.57
	H	$346.55	$356.18	$357.25
	V	$306.25	$306.25	$306.25
1989 Pax		370	620	850

Note: Numbers in (parentheses) are negative.

Table 3.9

BOSTON GATEWAY
ROUND TRIP FARE DIFFERIENTIALS

U.S. Dest.	Fare Class	New Brunswick Origin FREDERICTON	SAINT JOHN	MONCTON
Miami	J	$245.97	$245.97	$267.37
	Y	$309.11	$309.11	$326.23
	B	$285.98	$285.98	$345.90
	H			
	V	$353.09	$253.09	$363.79
1989 Pax		680	850	1720
Tampa	J	$136.83	$136.83	$153.95
	Y	$210.67	$210.67	$225.65
	B	$130.62	$130.62	$188.40
	H			
	V	$395.03	$395.03	$403.59
1989 Pax		1770	3950	5490
New York	J			
	Y	$510.06	$512.00	$452.28
	B	$278.79	$287.35	$249.90
	H	$217.77	$221.21	$182.28
	V	$169.18	$169.18	$119.95
1989 Pax		1100	1440	1660
Boston	J			
	Y			
	B			
	H			
	V			
1989 Pax		1054	15772	4521
Chicago	J	$57.38	$70.22	$102.32
	Y	$77.35	$88.05	$118.01
	B	$303.05	$311.61	$326.59
	H	$200.78	$206.13	$214.69
	V	$244.68	$244.68	$244.68
1989 Pax		540	600	730
Los Angeles	J	$594.00	$619.68	$643.22
	Y	$837.40	$863.08	$882.34
	B	$550.03	$565.01	$571.43
	H	$434.93	$444.56	$445.63
	V	$444.63	$444.63	$444.63
1989 Pax		370	620	850

Note: Numbers in (parentheses) are negative.

fares available on the U.S. carriers is limited, a proposed service cannot rely on a niche exclusively servicing the deep discount market.

One particular market which almost always provides a fairly healthy fare differential is Los Angeles. There are significant savings available for all fare classes from all proposed gateways with the one exception of the business class from Bangor. Although it is likely that a price competitive service can be established for a Los Angeles destination, when the actual volume of potential passengers is considered (850 passengers annually), the service is not feasible on this basis alone. However, this is an area where a new or improved transborder air service could divert existing volumes.

3.5.3 Summary of Service and Fare Analysis

The service and fare analyses were undertaken in order that deficiencies could be identified in existing transborder air services with the ultimate goal of establishing new or improved transborder services for New Brunswick. The preceding analyses have highlighted opportunities for better service between specific city-pairs and the potential to establish a cost competitive alternative.

The service analysis has undertaken an in-depth review of the best existing transborder services available. In general, it was found that the vast majority of city-pairs are presently best served through Montreal or Toronto routings. For the most part, Fredericton currently experiences good transborder service with only a single stop in either Montreal or Toronto. Outbound service is generally efficient with minimal delays being incurred while connecting in either Montreal or Toronto. Inbound service from the U.S., however, is often plagued with excessive delays at the connecting airport. Furthermore, of particular note is the poor service existing between Fredericton and Boston which often requires stops in Moncton, Halifax, and Saint John before finally reaching the destination.

While transborder service from Fredericton often requires a single stop in either Toronto or Montreal, travellers originating in Saint John often must stop in Fredericton as well. For example, destinations such as Tampa, New York, Chicago, and Los Angeles all require a stop in Fredericton before continuing on to either Montreal or Toronto for a connection. Saint John does, however, offer the only direct transborder service available in New Brunswick. Two return flights per day

are offered by Air Atlantic to Boston providing same day return for passengers originating in Saint John. Travellers originating in Boston do not have effective same day return.

Transborder service from Moncton is generally similar to that existing in Fredericton. Fairly efficient, one stop service is available for most U.S. destinations via either Montreal or Toronto. However, as is the case with Fredericton, poor service currently exists from Moncton to Boston with most routings requiring at least two stops (Halifax and Saint John) before the destination is reached.

It is evident that from a service perspective, perhaps the greatest window of opportunity is for the improvement of service from both Fredericton and Moncton to Boston. Limited opportunities exist for the improvement to U.S. destinations other than Boston. With several of the existing flights offering single stop service to popular U.S. destinations, more efficient service would be hard to offer unless stop-over times could be reduced.

Although northern New Brunswick generates less than 1,000 transborder air trips annually, existing services are such that some diversion of these trips from the Montreal/Toronto gateway to a Saint John or Fredericton gateway could be achieved through better connections to the southern airports.

The main goal of the fare analysis was to identify the potential savings that might be available if transborder services were provided through a Maine or Boston gateway. Existing fares from the potential gateways of Presque Isle, Bangor, Portland, and Boston were identified for common destinations beyond. These fares were compared with current ticket prices for air service originating from each of the New Brunswick airports. The net difference was identified as the maximum available to charge for air service to the proposed gateway while still maintaining a competitive advantage. With this information, and knowing where service improvements might be explored, possible feasible routing can be identified for further analysis.

In general, it was found that many of the existing fare differentials associated with city pairs would be difficult to match. The business and regular economy fare classes generally presented the fewest opportunities for a cost competitive service, however the deep discount class in many cases offered at least some opportunity

to be cost competitive. Unfortunately, the quantity of available deep discount seats on U.S. carriers is normally restricted, thereby limiting the quantity of New Brunswick originating passengers that would travel under this fare category. The one market which in most cases offered a substantial savings for those originating out of a Maine airport rather than a New Brunswick airport was Los Angeles. It was consequently found that air service could be provided for those destined to Los Angeles from New Brunswick through a Maine gateway, and still provide a cost savings to the passenger. In general, the opportunities to provide cost competitive transborder service to a New England gateway without taking under consideration service improvements are limited.

3.6 Forecast of Potential Demand

Potential demand for a new or improved air service from New Brunswick to the U.S. will be composed of three distinct sources: 1) diversion of passengers from existing services usually routed over Montreal or Toronto, and destined to points throughout the United States; 2) diversion of existing surface trips typically destined to or beyond whichever U.S. gateway is chosen for the proposed air service: 3) and trips stimulated by the introduction of an air service which would not have been made without the service.

Having detailed existing air services and fares between select New Brunswick and U.S. cities, deficiencies have been identified which may provide opportunity for alternative service to compete, whether it be on a cost or service basis or a combination of both. These identified deficiencies in existing service provide the impetus for the diversion of existing volumes to a proposed service. The next logical step in the process is to assess the implications of establishing new or improved air service to a New England gateway. Presque Isle, Bangor, Portland, and Boston were evaluated in detail as potential gateways for air service from either Fredericton, Saint John, Moncton. Furthermore, a cursory evaluation of potential volumes from northern New Brunswick was undertaken.

An initial step in the process was to do a comprehensive financial analysis of operating an aircraft between each of the potential city pairs. After reviewing preliminary information concerning potential passenger volumes, block times, previous transborder air service experience and existing carrier fleets, it was felt that a deHavilland DASH 8 aircraft would be the most probable equipment used

to provide such a service. Currently, Air Atlantic's service between Saint John and Boston utilizes a DASH 8.

A model previously developed by the firm was utilized after more current costing information was obtained. The financial analysis accounted for direct costs of operating the aircraft, allocated overhead expenses, revenues, and profit. Specific, current cost information was obtained from a number of sources, including that extracted from past studies, data sent by Mr. Clayton Glenn reflecting industry averages, and cost ranges indicated by individual carriers. Specific cost information, including crew costs, maintenance, aircraft leasing, commissions, ground handling, servicing, insurance, advertising, fuel, food, and overhead were all factored into the financial analysis.

The initial set of analyses were conducted for proposed service between each of the 12 city pairs, assuming that the air service would consist of 2 return trips per day. This level of service would divert and stimulate the maximum number of passengers to a new or improved service albeit operating costs would also be a maximum. In addition, the two flights per day provide business travellers with same day return service and also permits more opportunities for connecting flights to U.S. destinations beyond the New England gateway.

After this initial set of analyses were completed, traffic volume estimates were identified based on the assumption only one return flight per day were available to the gateway. A discussion of this analysis is presented at the end of this section.

One other possible service format which might be considered is the provision of two same day return flights, 3 days per week. However, discussions with industry personnel indicated this type of service is only effective in market areas (ie. local market area) where there is no existing competition.

After consulting industry representatives it was learned that on average it is necessary to obtain a load factor of approximately 55 percent for a DASH 8 turbo-prop aircraft to be able to breakeven with its fully allocated costs. Obviously, lower load factors can support a service if the average fare type distribution is higher, however recalling from the fare analysis and the differentials which are available to charge for service to a U.S. gateway, it was found that

higher fares cannot be charged and still be competitive with existing services over Montreal or Toronto.

Given a 55 percent load factor, breakeven average fares were calculated between possible New England gateways and the three major New Brunswick airports, the results of which are presented in Table 3.10. As a comparison, fares for an economy ticket presently being charged for service from Fredericton, Saint John, and Moncton to Boston are $669.74, $495.16, and $616.24 respectively (all taxes included). Northern New Brunswick airports have not been included in this fare analysis because any new transborder air service would most likely originate from one of the three southern airports.

TABLE 3.10

DASH 8 SERVICE
ROUND TRIP BREAKEVEN FARES
(ALL TAXES INCLUDED)

	New Brunswick Origin		
US Gateway:	Fredericton	Saint John	Moncton
Presque Isle	$208.93	$229.54	$240.99
Bangor	227.25	234.12	266.18
Portland	270.76	273.05	307.40
Boston	311.97	311.97	346.32

A further financial analysis was undertaken which, given the average fare differential calculated in the fare analysis, determined the required load factor for the service to breakeven with its fully allocated costs. Given that the fare differentials available for service between New Brunswick and the various New England gateways, are for the most part, relatively low, breakeven factors were in most cases found to be well in excess of 1.0 (i.e. even average occupancies of 100 percent could not support the service given the fare differential being charged). A summary of the required load factors based on average fare differentials is shown in Table 3.11.

TABLE 3.11

DASH 8 SERVICE
BREAKEVEN LOAD FACTORS REQUIRED
(GIVEN AVAILABLE FARE DIFFERENTIALS)

	New Brunswick Origin		
US Gateway:	Fredericton	Saint John	Moncton
Presque Isle	1.93	N/A	3.27
Bangor	1.35	N/A	2.43
Portland	0.73	6.70	1.12
Boston	0.64	2.73	0.92

As shown in the above table there are no values entered for Saint John to either Presque Isle or Bangor. It was found that the fare that could be charged and still be competitive with alternative routings over Montreal and Toronto were so low that breakeven factors were extremely large. In fact, any value in the table greater than 1 represents a service which cannot support itself even with 100 percent occupancy and be cost competitive with alternative routings. Some city-pairs cannot expect to be cost competitive with existing services given the requirement of such high load factors.

Model

The next step in the process of determining potential air passenger demand for any proposed transborder air service was to develop a tool which was capable of testing a number of different air service scenarios. A spreadsheet-based computer model was developed which, given a number of input variables, estimates the potential demand for a given air service to a New England gateway, and the quantity of surface trips that must be diverted (if necessary) for the service to breakeven financially. Each New England gateway was analyzed separately. The model is based on providing two return flights a day to maximize passenger volumes. A reduced service and the resulting passenger volume is addressed at the end of this section.

Given a breakeven average fare as previously calculated for the particular city-pair, the total fare (eg. Fredericton to Presque Isle + Presque Isle to Miami) is compared with the fare available over an existing service via Montreal or Toronto. A cost savings or increase is then tabulated on the spreadsheet and a comparison made as to whether or not it is better or worse than existing services.

After having obtained existing service schedules offered by the major carriers from the proposed New England gateways through the OAG Electronic Edition travel database, the potential service over a New England gateway could be evaluated. Inbound and outbound service for morning and evening schedules were evaluated on the basis of total travel time required over the proposed service versus the best available existing service. The amount of additional (or decreased) travel time required by the proposed service is posted by the spreadsheet for each of the inbound and outbound services in the morning and evening. It must be noted that a connection time of 60 minutes (as recommended by the Official Airlines Guide) was assumed at each of the New England airports for customs clearance. Furthermore, it was conservatively assumed that flight scheduling would be possible to minimize stop-over times at the gateway in excess of 60 minutes.

Based on the results of the comparison of fares and services, a maximum probable percentage of diversion of existing air traffic was estimated, thus providing a good indication of the possible market. The model provides a means of assessing the fare and service impacts. For example, if a service is proposed from Fredericton to Bangor, and it is found that for connections to Miami the total fare will be higher, and total travel times will be longer for both inbound and outbound flights, a very low percent of passengers presently destined from Fredericton to Miami can be expected to divert to this service. If however, at the other end of the spectrum, the total fare is less expensive, and service is similar or better in terms of total travel time, then a very high percentage of existing passenger volumes can be expected to be diverted through Bangor. The model enables the analyst to test the sensitivity of different diversion percentages which have a direct bearing on the probable success of the service.

Furthermore, a market stimulation factor was applied which reflects any new trips which are made in concert with the implementation of a new service. It is extremely difficult to estimate the amount of new traffic which can be stimulated with the introduction of a new service, given that much depends on the marketing

effort and the convenience the service offers. Discussions with representatives of Transport Canada's Policy and Coordination Branch revealed that introduction of new services has resulted in market stimulations ranging from 10 to 25 percent depending on the particular city-pairs involved. For the purposes of this exercise, the most aggressive market stimulation that could be expected was utilized with the model in order that the maximum potential passenger demand could be determined.

While the Saint John - Boston city-pair currently has air service, a stimulation factor was utilized to optimistically account for market growth that could result from improved service (e.g. better two-way same day scheduling, jet service, aggressive marketing, etc.).

The results of the model runs are shown in Tables 3.12 through 3.15. Each table represents the results for a given New England gateway and analyzes the potential diversion of air traffic from existing services based on two return flights per day. The sum of the divertible air volumes plus market stimulation represents the total passengers per flight which can be expected to utilize the service. Furthermore, the number of surface trips which would have to be diverted to the air mode is indicated. The tables reflect the most aggressive estimate of passenger traffic which would be expected to divert to the proposed air service. Table 3.16 summarizes the divertible plus stimulated passengers per flight which could be expected from the New Brunswick airports to each New England gateway. No measurable passenger volumes are shown from the northern New Brunswick airports primarily because of existing routing patterns which favour Montreal and Toronto as the gateway. However, there is a potential for 0.5 to 1 passenger per day if good connections out of a southern New Brunswick airport can be provided.

Given the preceding potential volumes, it is apparent that no individual city-pair, other than Saint John to Boston, can be expected to support a DASH 8 air service without trips being diverted from the surface mode. In fact, all individual city-pairs, with the exception of Saint John - Boston, would require the majority of passengers to be diverted from the surface mode in order that breakeven volumes are realized. It should be noted that the values in Table 3.16 are a maximum potential volume, which assumes 25 percent market stimulation on the basis of better service.

Table 3.12

Presque Isle Gateway: Potential Air Traffic

Origin City	US Gateway	Aircraft	Break Even Avg Fare	Break Even Volume (pax/flight)	U.S. Dest.	Economy Y Class Air Fare B-Better W-Worse (savings $)	Discount B Class Air Fare B-Better W-Worse (savings $)	AM Inbound Service: B-Better W-Worse S-Similar (add'l travel time, mins.)	AM Outbound Service: B-Better W-Worse S-Similar (add'l travel time, mins.)	PM Inbound Service: B-Better W-Worse S-Similar (add'l travel time, mins.)	PM Outbound Service: B-Better W-Worse S-Similar (add'l travel time, mins.)	Maximum Probable Diversion (Percent)	Total Exist. Air Market Obtainable (2-way pax/yr)	Divertable Air Vols. (pax/flight)	Max. Market Stimulation (25%) (pax/flight)	Diversion of Surface Trips Required (pax/flight)	Diversion of Surface Trips Required (1-way/yr)
YPC	PQI	DASH8	$200.93	20	MIAMI	W (-184.67)	W (-78.76)	S (5)	W (243)	S (14)	W (193)	25	600	0.1	0.0		
					TAMPA	W (-282.91)	W (-135.29)	W (138)	W (93)	W (33)	S (-2)	25	1,770	0.3	0.1		
					NEW YORK	S (0.11)	W (-92.93)	S (-100)	S (14)	S (6)	S (-12)	50	1,100	0.4	0.1		
					BOSTON	W (-62.45)	W (-252.77)	S (-79)	S (-100)	S (-29)	S (n.a.)	75	1,054	0.5	0.1		
					CHICAGO	W (-299.02)	W (-75.65)	S (-62)	W (111)	S (2)	S (-24)	25	560	0.1	0.0		
					L.A.	W (-94.38)	S (144.59)	W (156)	W (n.a.)	n.a.	W (200)	25	370	0.1	0.0		
					TOTAL								5,514	1.5	0.4	10.1	13,237
YBJ	PQI	DASH8	$229.94	20	MIAMI	W (-125.08)	W (-99.37)	S (-144)	W (204)	S (-53)	W (204)	25	850	0.1	0.0		
					TAMPA	W (-229.52)	W (-155.96)	S (-11)	W (54)	W (53)	S (-63)	25	3,950	0.7	0.2		
					NEW YORK	W (-10.36)	W (-104.98)	S (-143)	S (-25)	S (-61)	S (-60)	50	1,440	0.5	0.1		
					BOSTON	W (-257.64)	W (-362.54)	S (-13)	W (96)	W (127)	W (117)	25	15,772	2.7	0.7		
					CHICAGO	W (-308.93)	W (-67.70)	S (6)	S (n.a.)	S (-29)	W (61)	25	600	0.1	0.0		
					L.A.	W (-29.25)	S (138.96)	W (117)	W (144)	n.a.	W (163)	25	620	0.1	0.0		
					TOTAL								23,232	4.2	1.1	14.7	10,765
YQM	PQI	DASH8	$240.99	20	MIAMI	W (-119.01)	W (-50.90)	W (30)	W (216)	W (37)	W (206)	25	1,720	0.3	0.1		
					TAMPA	W (-234.97)	W (-109.57)	n.a.	W (64)	W (57)	S (-52)	25	5,690	0.9	0.2		
					NEW YORK	W (-61.73)	W (-153.68)	S (-13)	W (105)	S (-98)	W (104)	25	1,660	0.3	0.1		
					BOSTON	W (-148.01)	W (-292.78)	S (27)	S (-39)	W (52)	S (1)	25	4,521	0.8	0.2		
					CHICAGO	W (-298.42)	W (-84.17)	S (-7)	S (n.a.)	W (92)	W (101)	25	730	0.1	0.0		
					L.A.	W (-21.46)	S (133.93)	W (147)	S (-67)	n.a.	W (203)	25	850	0.1	0.0		
					TOTAL								14,971	2.6	0.6	14.0	12,261

NOTE: ASSUMES THAT NO EXCESS STOP-OVER TIME IN PQI (>60 MIN)

Table 3.13

Bangor Gateway: Potential Air Traffic

Origin City	US Gateway	Aircraft	Break Even Avg Fare	Break Even Volume (pax/flight)		U.S. Dest.	Economy Y Class Air Fare D=Better N=Worse (savings $)	Discount D Class D=Better N=Worse (savings $)	AM Inbound Service: D=Better N=Worse S=Similar (add'l travel time, mins.)	AM Outbound Service: D=Better N=Worse S=Similar (add'l travel time, mins.)	PM Inbound Service: D=Better N=Worse S=Similar (add'l travel time, mins.)	PM Outbound Service: D=Better N=Worse S=Similar (add'l travel time, mins.)	Maximum Probable Diversion (Percent)	Total Exist. Air Market Obtainable (2-way pax/yr)	Divertable Air Vols. (pax/flight)	Nas. Market Stimulation (25%) (pax/flight)	Diversion of Surface Trips Required (pax/flight)	Diversion of Surface Trips Required (1-way/yr)
YFC	BGR	DASH8	$227.25	20	MIAMI		W (-104.19)	D (33.15)	W (79)	W (193)	W (22)	W (135)	25	680	0.1	0.0		
					TAMPA		W (-193.33)	W (-129.19)	D (-80)	W (63)	N (91)	D (-6)	25	1,770	0.3	0.1		
					NEW YORK		W (-12.34)	W (-61.29)	D (-155)	W (75)	D (-35)	D (-23)	50	1,100	0.4	0.1		
					BOSTON		W (-27.28)	W (-190.70)	D (-140)	D (-120)	D (-75)	D (n.a.)	100	1,054	0.7	0.2		
					CHICAGO		W (-266.17)	W (-39.32)	D (-211)	W (130)	D (-184)	D (55)	25	540	0.1	0.0		
					L.A.		D (126.43)	D (180.92)	D (25)	W (134)	n.a.	W (154)	75	370	0.2	0.0		
					TOTAL									5,514	1.8	0.5	33.7	12,9[illegible]
YSJ	BGR	DASH8	$234.12	20	MIAMI		W (-111.84)	D (26.28)	D (-138)	W (93)	D (25)	W (101)	25	650	0.1	0.0		
					TAMPA		W (-200.28)	W (-136.06)	D (n.a.)	D (17)	D (14)	W (63)	25	3,950	0.7	0.2		
					NEW YORK		W (-17.27)	W (-59.56)	D (-205)	D (29)	D (-89)	D (-68)	100	1,440	1.0	0.2		
					BOSTON		W (-208.73)	W (-205.72)	D (-81)	D (-82)	W (70)	W (67)	50	10,772	5.4	1.4		
					CHICAGO		W (-262.24)	W (-37.63)	D (-158)	N (84)	D (224)	D (13)	25	600	0.1	0.0		
					L.A.		D (145.24)	D (189.03)	D (-21)	W (118)	n.a.	W (114)	75	420	0.3	0.1		
					TOTAL									23,232	7.6	1.9	10.5	7,447
YQM	BGR	DASH8	$266.18	20	MIAMI		W (-126.00)	D (54.14)	W (137)	W (115)	W (142)	W (153)	25	1,720	0.3	0.1		
					TAMPA		W (-217.28)	W (-110.34)	D (n.a.)	N (39)	W (81)	W (70)	25	5,490	0.9	0.2		
					NEW YORK		W (-109.25)	W (-129.07)	D (-63)	W (171)	D (-84)	W (88)	50	3,440	0.6	0.1		
					BOSTON		W (-119.71)	W (-236.50)	D (-29)	W (49)	D (33)	D (-37)	50	4,521	1.5	0.4		
					CHICAGO		W (-266.64)	W (-54.71)	D (-151)	D (-162)	D (-91)	W (65)	50	730	0.3	0.1		
					L.A.		D (132.44)	D (163.39)	D (21)	D (n.a.)	n.a.	W (144)	100	880	0.6	0.1		
					TOTAL									16,971	4.2	1.0	14.8	10,703

NOTE: ASSUMES THAT NO EXCESS STOP-OVER TIME IN BGR (>45 MIN)

Table 3.14

Portland Gateway: Potential Traffic Volumes

Origin City	US Gateway	Aircraft	Break Even Avg Fare	Break Even Volume (pax/flight)	U.S. Dest.	Economy Y Class Air Fare B=Better W=Worse (savings $)	Discount B Class Air Fare B=Better W=Worse (savings $)	AM Inbound Service: B=Better W=Worse S=Similar (add'l travel time, mins.)	AM Outbound Service: B=Better W=Worse S=Similar (add'l travel time, mins.)	PM Inbound Service: B=Better W=Worse S=Similar (add'l travel time, mins.)	PM Outbound Service: B=Better W=Worse S=Similar (add'l travel time, mins.)	Maximum Probable Diversion (Percent)	Total Enlst. Air Market Obtainable (2-way pax/yr)	Divertable Air Volu. (pax/flight)	Max. Market Stimulation (25%) (pax/flight)	Diversion of Surface Trips Required (pax/flight)	Diversion of Surface Trips Required (1 way/yr)
PDX	PHX	DASH8	$270.76	20	MIAMI	W (-126.77)	B (9.41)	W (107)	W (94)	B (42)	S (17)	25	660	0.1	0.0		
					TAMPA	W (-208.93)	W (-157.58)	B (-147)	W (86)	W (51)	S (21)	25	1,770	0.3	0.1		
					NEW YORK	W (-0.22)	W (-5.92)	B (-187)	B (-142)	B (-102)	B (-96)	100	1,100	0.8	0.2		
					BOSTON	B (8.27)	W (-22.58)	B (-137)	B (-122)	B (-69)	B (n.a.)	100	1,054	0.7	0.2		
					CHICAGO	W (-81.78)	W (-53.76)	B (-197)	S (23)	B (-234)	S (-17)	100	560	0.4	0.1		
					L.A.	B (522.45)	B (137.41)	B (39)	W (179)	n.a.	W (96)	100	370	0.3	0.1		
					TOTAL								5,514	2.5	0.6	16.9	12,302
SJC	PHX	DASH8	$272.06	20	MIAMI	W (-129.86)	B (7.12)	W (-162)	W (66)	B (-53)	B (-55)	25	850	0.1	0.0		
					TAMPA	W (-211.22)	W (-159.87)	B (n.a.)	W (36)	B (-20)	B (-105)	25	3,950	0.7	0.2		
					NEW YORK	W (-0.36)	B (0.35)	B (-261)	B (-192)	B (-160)	B (-146)	100	1,660	1.0	0.2		
					BOSTON	W (-94.17)	W (-113.03)	B (-82)	B (-88)	W (76)	W (68)	25	15,772	2.7	0.7		
					CHICAGO	W (-73.37)	W (-47.69)	B (140)	S (-27)	B (276)	W (47)	50	600	0.2	0.1		
					L.A.	B (345.94)	B (150.10)	W (-89)	W (129)	n.a.	W (66)	100	620	0.4	0.1		
					TOTAL								23,232	5.1	1.3	13.6	9,911
SEA	PHX	DASH8	$307.60	20	MIAMI	W (-146.29)	B (32.68)	W (162)	W (67)	W (30)	S (-2)	25	1,720	0.3	0.1		
					TAMPA	W (-230.59)	W (-136.66)	B (n.a.)	W (59)	W (113)	B (97)	25	5,490	0.9	0.2		
					NEW YORK	W (-96.65)	W (-71.65)	B (-98)	S (-10)	B (-156)	S (12)	50	1,660	0.6	0.1		
					BOSTON	W (-7.64)	W (-66.09)	S (-29)	B (-54)	S (16)	B (-35)	100	4,521	3.1	0.8		
					CHICAGO	W (-77.76)	W (-66.86)	B (-168)	B (-252)	B (-162)	W (100)	75	730	0.4	0.1		
					L.A.	B (530.79)	B (122.17)	B (-66)	B (n.a.)	n.a.	W (88)	100	850	0.6	0.1		
					TOTAL								14,971	5.9	1.5	12.7	9,256

NOTE: ASSUMES THAT NO EXCESS STOP-OVER TIME IS Pax (>60 MIN)

Table 3.15

Boston Gateway: Potential Air Volumes

Origin City	VB Gateway	Aircraft	Break Even Avg Fare	Break Even Volume (pax/flight)	U.S. Dest.	Economy Y Class Air Fare B=Better M=Worse (savings $)	Discount B Class Air Fare B=Better M=Worse (savings $)	AM Inbound Service: B=Better M=Worse S=Similar (add'l travel time, mins.)	AM Outbound Service: B=Better M=Worse S=Similar (add'l travel time, mins.)	PM Inbound Service: B=Better M=Worse S=Similar (add'l travel time, mins.)	PM Outbound Service: B=Better M=Worse S=Similar (add'l travel time, mins.)	Maximum Probable Diversion (Percent)	Total Exist. Air Market Obtainable (2-way pax/yr)	Divertable Max. Market Air Vols. Stimulation (25%) (pax/flight)	Max. Market Stimulation (25%) (pax/flight)	Diversion of Surface Trips Required (pax/flight)	Diversion of Surface Trips Required (1-way/yr)
TPC	BOS	DASH8	$311.97	20	MIAMI	W (-2.86)	W (-25.99)	S (3)	S (0)	B (130)	B (33)	100	600	0.5	0.1		
					TAMPA	W (-101.30)	W (-101.35)	B (-154)	S (14)	S (-21)	B (n.a.)	50	1,720	0.6	0.2		
					NEW YORK	B (198.09)	W (-33.10)	B (-179)	B (-137)	B (-92)	B (-99)	100	1,100	0.4	0.2		
					BOSTON	B (357.77)	B (169.94)	B (-216)	B (-201)	B (-151)	B (n.a.)	100	3,056	0.7	0.2		
					CHICAGO	W (-234.62)	W (-8.92)	B (-176)	W (36)	B (-264)	B (-91)	25	540	0.1	0.0		
					L.A.	B (525.48)	B (298.06)	B (-102)	S (10)	n.a.	S (20)	100	370	0.3	0.1		
					TOTAL								9,336	2.9	0.9	10.0	11,960
TBJ	BOS	DASH8	$311.97	20	MIAMI	W (-2.86)	W (-25.99)	W (58)	S (14)	B (-141)	B (-71)	100	850	0.6	0.1		
					TAMPA	W (-101.30)	W (-101.35)	B (n.a.)	S (6)	B (-62)	S (-10)	25	3,950	0.7	0.2		
					NEW YORK	B (200.03)	W (-26.62)	B (-233)	B (-107)	B (-150)	B (-140)	100	1,440	1.0	0.2		
					BOSTON	B (183.19)	B (50.38)	S (-6)	S (-13)	S (-6)	B (-11)	100	35,772	10.0	2.7		
					CHICAGO	W (-223.92)	W (-0.36)	B (-119)	B (-24)	B (-264)	B (-27)	50	600	0.2	0.1		
					L.A.	B (301.13)	B (153.04)	B (-122)	B (-31)	n.a.	B (-28)	100	620	0.4	0.1		
					TOTAL								39,232	13.7	3.0	2.9	4,114
TGM	BOS	DASH8	$346.32	20	MIAMI	W (-20.09)	W (-20.09)	W (57)	S (29)	B (-39)	S (19)	75	1,720	0.9	0.2		
					TAMPA	W (-120.67)	W (-120.67)	B (n.a.)	S (26)	W (70)	B (-93)	25	5,490	0.9	0.2		
					NEW YORK	W (-96.62)	W (-96.62)	B (-91)	B (-65)	B (-145)	S (8)	75	1,660	0.9	0.2		
					BOSTON	B (269.92)	B (269.92)	B (-109)	B (-134)	B (-69)	B (-115)	100	6,920	2.1	0.6		
					CHICAGO	W (-228.31)	W (-228.31)	B (-120)	B (-297)	B (-213)	S (19)	50	720	0.3	0.1		
					L.A.	B (306.03)	B (306.03)	B (-120)	B (-232)	n.a.	S (86)	100	850	0.6	0.1		
					TOTAL								24,971	8.6	2.3	23.9	8,574

NOTE: ASSUMES THAT NO EXCESS STOP-OVER TIME IN BOS (>60 MIN)

TABLE 3.16

POTENTIAL TRANSBORDER AIR TRAFFIC
(PASSENGERS/FLIGHT)

	New Brunswick Origin			
	Fredericton	Saint John	Moncton	Northern N.B.
US Gateway:				
Presque Isle	1.9	5.3	3.2	---
Bangor	2.3	9.5	5.2	---
Portland	3.1	6.4	7.4	---
Boston	3.6	17.1	8.3	---

Note: - estimates are based on two return flights per day.

Since the volumes suggest there are no city-pairs other than Saint John - Boston (which currently has direct service) that can presently support a new transborder service, the only other alternative to be evaluated is the possibility of a new service which would include a co-terminal operation. A Saint John - Moncton co-terminal operation to Boston is seen to provide a maximum potential for 25.4 passengers per flight which is above the critical 20 needed for a breakeven scenario. However, by adding an additional stop for Moncton originating traffic the travel time is increased and the convenience reduced somewhat. The net effect was studied by rerunning the model. It was found that there would be a decrease of at least one passenger per flight should an additional stop be introduced on a Moncton transborder service. Furthermore, the Saint John to Boston stage is currently being served by Air Atlantic and an introduction of an additional service would only undermine the potential success of the existing service.

Thus it would seem there are three possible alternatives to improving transborder passenger air service out of New Brunswick. The first such possibility is improving the existing service by feeding Moncton, Fredericton and northern New Brunswick traffic into Saint John to take advantage of the Saint John - Boston two return flights per day service. The second possibility is to evaluate the alternative of a co-terminal service from Moncton to Fredericton to Boston. This routing would generate approximately 11 trips per flight on a two return flights per day service. The third alternative would be to evaluate a co-terminal service which would provide one return flight per day.

To evaluate a service with one return flight per day, it is necessary to estimate the potential traffic. Although a reduction in service by one-half will reduce the number of passengers on the city-pairs shown in Table 3.16, the factor is not the same. Discussions with industry officials indicated a reduction in service from 2 to 1 return flights per day on a route where there is competition can expect to incur a 40 percent reduction in passenger volumes. Thus for a one return flight per day service, the values in Table 3.16 can be reduced by 40 percent.

3.7 Air Cargo Demand

Air cargo has traditionally been classified into one of three categories, namely; air mail, air express, and air freight. Air mail is typically post office mail carried by regularly scheduled passenger aircraft. Air express is associated with high priority mail carried by specialized aircraft operating as part of a scheduled air network. Typical air express operators include Federal Express, Purolator, United Parcel Service, and Express Airborne. Air freight is normally associated with high priority, time sensitive shipments which are larger than air express. Examples of air freight include perishables such as fish, meats, and flowers or high value/high risk items such as computers or electronics. Typically, air freight is handled by passenger airlines offering this type of service.

A shipper survey conducted in 1989 by the National Transportation Agency found that approximately 50 percent of shippers use air freight services for roughly 10 percent of their goods. The majority of shippers indicated that they normally use dedicated freighter services. Most shippers had indicated that they contact the carriers directly to access service, however some do make use of the services offered by freight forwarders. The overnight market has been the fastest growing segment of this industry for the past few years. Air Canada, who has the only fleet of dedicated air freighters, has established hub systems in Winnipeg, Montreal and Moncton for the cargo side of its operations. United Parcel Service and Federal Express have expanded their Canadian services and now offer coast-to-coast service by utilizing chartered air services. The increased use of the DASH 8 aircraft in the Atlantic region over the past several years had initially reduced the cargo capacity of the system because of the aircraft's small cargo hold. However, the increase in service frequencies that have accompanied its use have partially made up for any lost cargo capacities.

As an industry average, the proportion of revenue that might be expected to be generated for the movement of cargo on a unit toll (as opposed to charter operations) air service was found to be 11.2 percent in 1989. The percentage varies according to the size of the particular carrier's operations and aircraft type. Transport Canada has traditionally categorized the size of carriers from Level I through IV depending on the annual number of passengers that are handled. A Level I carrier is defined as one which has carried in excess of 1,000,000 revenue-passengers or 200,000 metric tonnes of cargo or more for two or more consecutive years. A Level II carrier transports 50,000 or more revenue-passengers or 10,000 metric tonnes of cargo annually, Level III carriers move in excess of 3,000 revenue passengers or 1,000 metric tonnes, and Level IV carriers handle less passengers or cargo than Level III but still earn in excess of $250,000 in revenue. Table 3.17 gives a breakdown of the percent of total revenue generated by cargo which can be expected for a carrier according to its size category. Air Nova and Air Atlantic are both Level II carriers. Furthermore, discussions with representatives of Air Canada have indicated that the proportion of revenue generated by cargo will vary from city to city. The representative estimated that cargo only contributes one percent of total revenue in Fredericton, while Moncton and Saint John experience a five to six percent contribution.

TABLE 3.17

PERCENT OF REVENUE GENERATED BY CARGO
(1989 DATA)

Carrier Group	Annual Passengers	Percent of Operating Revenues
Level I	1,000,000+	11.7%
Level II	50,000 to 999,999	6.1%
Level III	5,000 to 49,999	27.0%
Level IV	< 5,000	3.5%

3.7.1 Existing Volumes

3.7.1.1 Exports

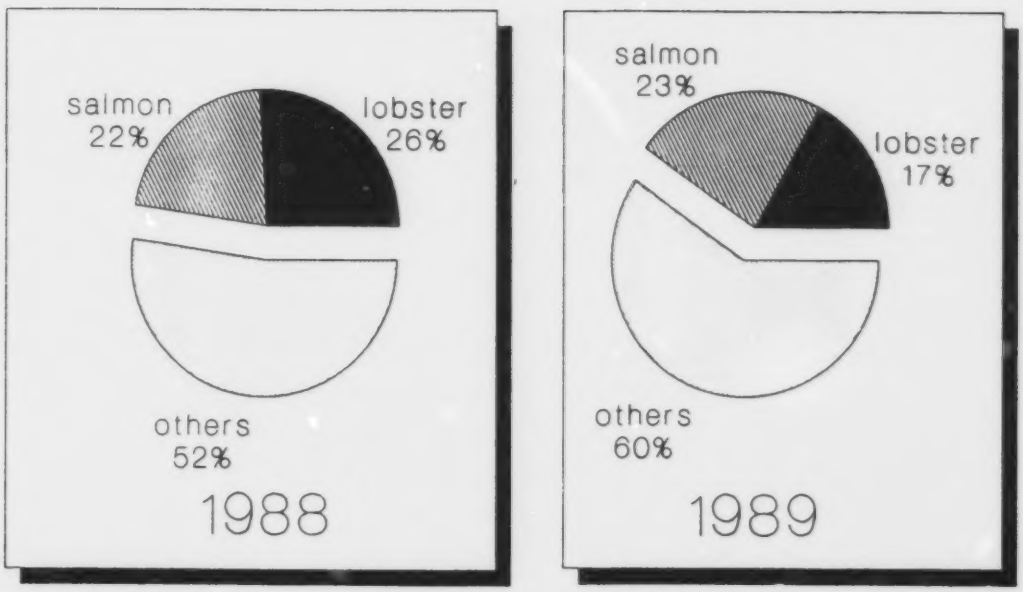
Representatives of the airline industry indicated that their method of operations in air passenger services make it difficult to determine quantities of goods that move from one destination to another.

However, the International Trade Division of Statistics Canada keeps records of shipments which cross the border. Such variables as the province or state of origin, commodity, quantity, value, month, and mode of transportation are extracted from waybills as the goods clear customs before entering or leaving the country. The raw data for export information were obtained from the New Brunswick Department of Commerce and Technology, while import information had to be purchased from Statistics Canada. The raw data were structured using dBase IV and analyzed.

Export information was available for 1988 and 1989 movements, with annual records of 9,047 and 8,166, respectively for all modes of transportation. Each record represents the monthly total of a particular commodity moving by a specific mode of transportation. These annual databases include 150 and 154 records for air shipments. However, looking at the commodities being exported by air, it is seen in Figure 3.15 that fresh lobster and salmon account for 48 and 50 percent of all exports being sent to the U.S. by air in 1988 and 1989, respectively. In total, $600,919 worth of lobster and $505,350 worth of fresh salmon were shipped by air to the United States in 1988. Slightly less volumes were moved in 1989 with the total value for fresh lobster and salmon being $385,942 and $522,916, respectively. The "other" products being exported consist of a whole myriad of commodities with no other large volume product being identified.

While fresh lobster and salmon were found to be the most common products being shipped by air to the U.S., it was also determined that the proportions being sent by air compared to total exports of these products are low. In 1988, 1.8 percent (by value) of all fresh lobster exports to the U.S. was sent by air, while only 5.5 percent (by value) of all fresh salmon was sent by air. An even smaller amount is sent by water (to Maine), while the vast majority of these products were shipped by truck. Similar proportions exist for 1989 data.

Exports to U.S. by Air



Proportions by Value of Export

Source: Statistics Canada, International Trade Division

FIGURE 3.15

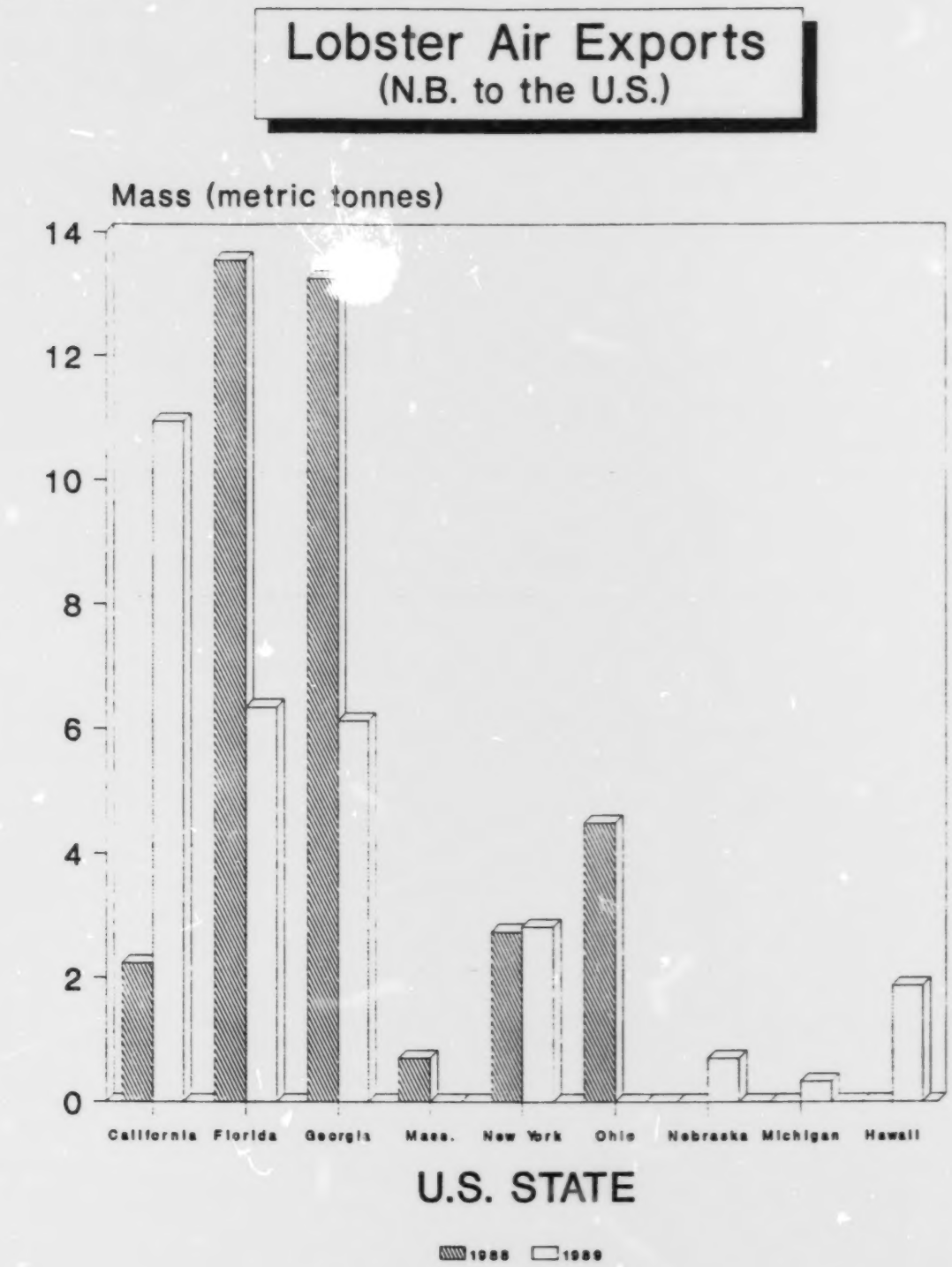
Figure 3.16 segregates the total fresh lobster air exports by its final destination within the United States. As shown, California, Florida, and Georgia have proven to be the main destinations for lobster being shipped by air. Of note is the fact that very little fresh lobster is sent by air to the markets in Boston. This is primarily the result of distance and the existing good overnight truck service available into the Boston area.

Figure 3.17 depicts the distributions of fresh salmon exports by final U.S. destination. As shown, California is by far the largest market for fresh salmon shipped by air. Although Massachusetts had nearly 20 tonnes shipped in 1988, the quantity shipped there in 1989 was nearly nil.

While fresh lobster and salmon represent the majority of seafood being exported by air, as well as the two highest volumes of all products, shipping characteristics of other seafood products shipped to the U.S. were examined to determine if there is any potential for increased air use. Table 3.18 was compiled from the results of analyses conducted to show the quantities of fresh seafood products being shipped by all modes final destinations within the United States. As shown, in 1989 there were over 19 million kilograms of seafood exported from New Brunswick to the United States. Maine received the vast majority of these shipments, which accounted for over 14 million kilograms. Massachusetts was the second most popular destination receiving over 4 million kilograms of exported seafood. Figure 3.18 graphically depicts the U.S. destinations as presented in Table 3.18.

The single most popular commodity (by mass) as shown in Table 3.18, was found to be herring, representing 61 percent of all seafood exports, nearly 94 percent of which is destined for Maine. Herring is mostly shipped to Maine by water (78 percent).

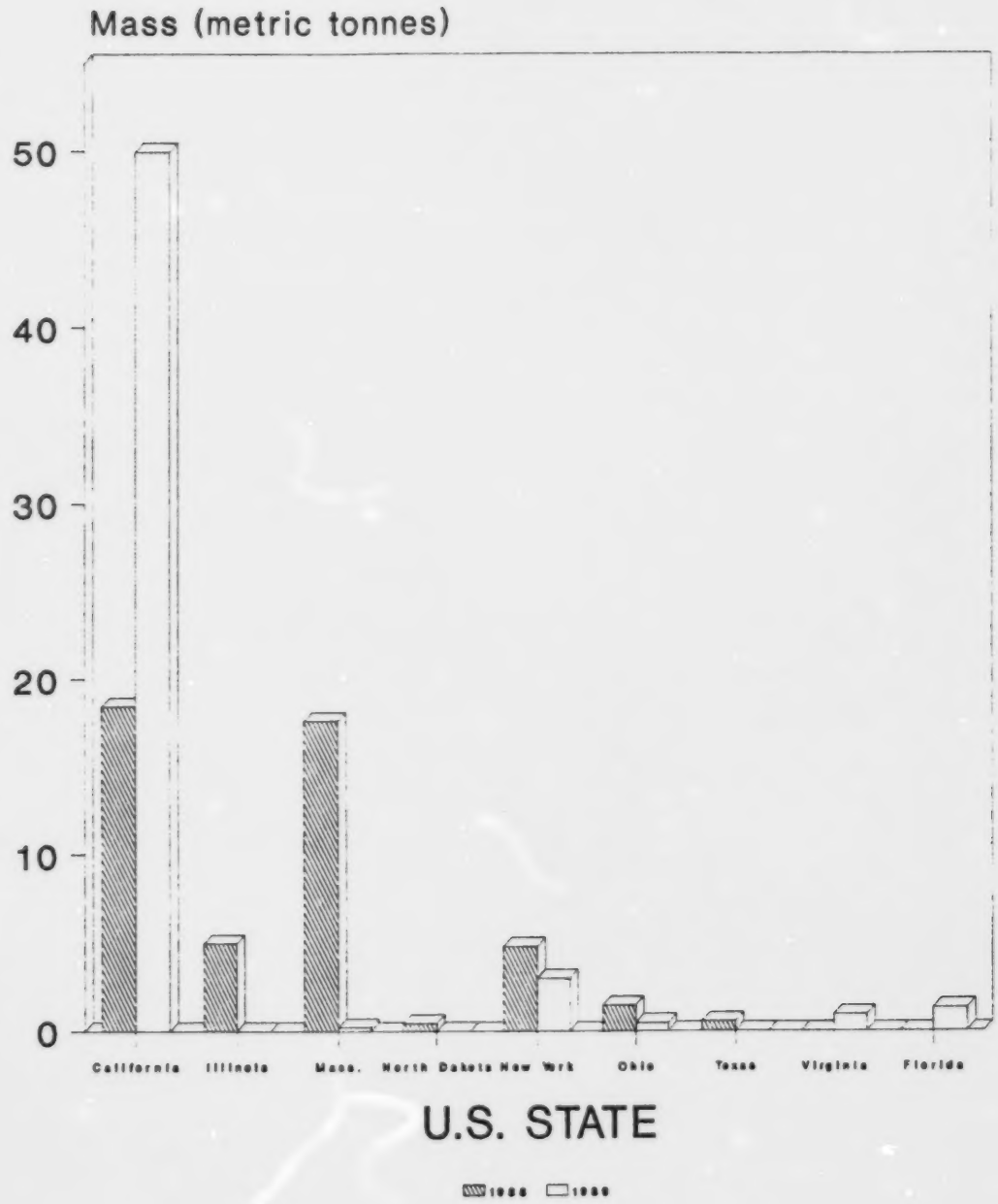
While fresh lobster is mainly flown to markets in California, Florida, and Georgia, Table 3.18 shows that the most popular destinations by all modes of transportation are Maine and Massachusetts with 1,207 (40 percent) and 1,116 (37 percent) tonnes each. The most common market for fresh salmon is Massachusetts which receives 1,386 tonnes (or over 75 percent) of all fresh salmon exports.



Source: Statistics Canada, International Trade Division

FIGURE 3.16

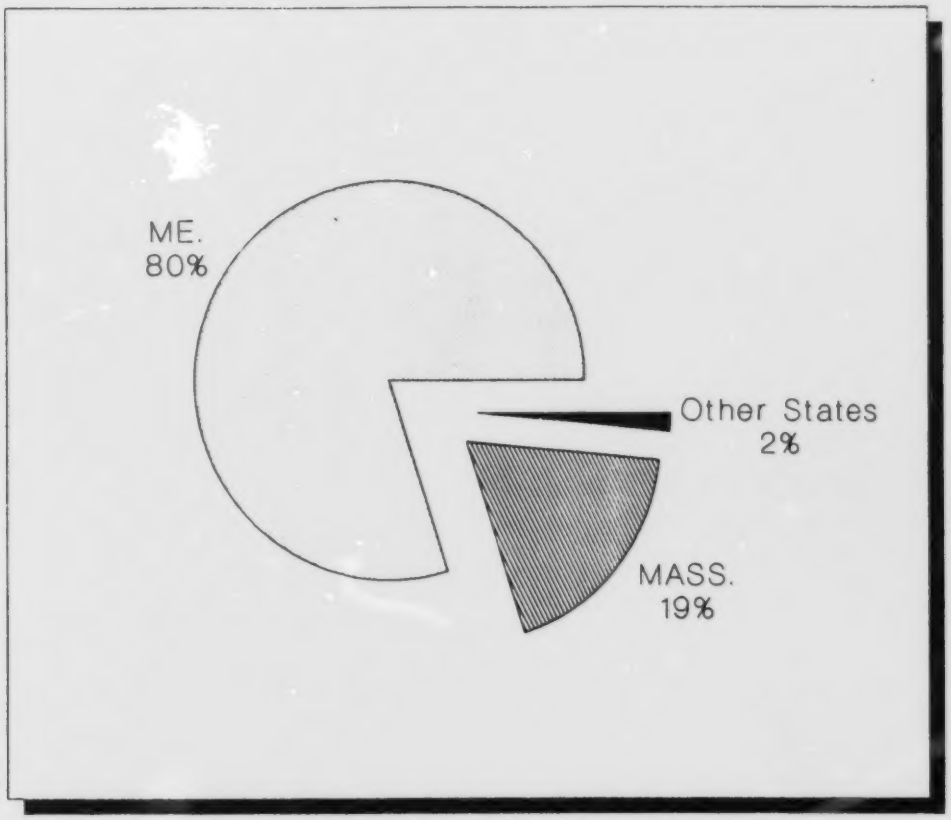
Atlantic Salmon Air Exports
(N.B. to the U.S.)



Source: Statistics Canada, International Trade Division

FIGURE 3.17

Fresh Fish/Seafood Exports N.B. to U.S.
All Modes of Transportation -1989



Proportions by Weight

Source: Statistics Canada, International Trade Division

FIGURE 3.18

Table 3.18

Fresh Fish/Seafood Exports from New Brunswick to the United States
(Kilograms -1989)

Commodity	CA	MA	NY	NC	ME	FL	RI	VA	WA	NJ	MI	NH	GA	CT	OTHER	Total (Kg.)
trout	0	3,090	0	0	3,248	0	0	0	0	0	0	0	0	0	0	6,338
salmon	58,405	1,385,925	67,403	2,678	300,499	1,292	497	907	14,498	0	0	0	0	0	454	1,832,558
halibut	0	4,486	508	0	11,382	0	0	0	0	0	0	0	0	0	0	16,376
plaice	0	1,519	0	0	10,392	0	0	0	0	0	0	0	0	0	0	11,911
sole	0	15,226	4,604	0	37,524	0	0	0	0	668	0	0	0	0	1,886	59,908
flatfish	0	689	0	0	0	0	0	0	0	0	0	0	0	0	0	689
herring	0	743,186	16,996	0	11,163,011	0	11,000	0	0	0	0	0	0	0	0	11,934,193
cod	0	324,752	6,487	0	295,910	0	45	0	0	0	13,105	0	0	0	0	640,299
haddock	0	49,831	0	0	77,976	0	0	0	0	0	0	0	0	0	0	127,807
coalfish	0	14,822	0	0	44,778	0	0	0	0	0	0	0	0	0	0	59,600
mackerel	0	8,756	0	0	76,055	0	0	0	0	0	0	1,205	0	0	0	86,016
dogfish	0	223	0	0	211	0	0	0	0	0	0	0	0	0	0	434
freshfish	0	318,339	2,697	0	307,139	0	23,191	0	0	0	0	0	0	0	544	651,910
lobster	50,020	1,116,197	95,922	0	1,207,751	27,037	1,832	0	0	14,655	0	67,998	6,126	437,743	13,585	3,038,866
shrimp	0	6,052	0	0	200	0	0	0	0	0	0	0	0	0	0	6,252
crabs	0	41,078	0	0	6,774	0	153	0	0	0	0	0	0	0	0	48,005
oysters	0	2,957	0	0	16,173	0	0	0	0	0	0	583	0	0	0	19,713
scallops	0	154,125	327	0	803,388		5,234	2,619		237	6,486	881	0	0	1,814	975,111
Totals:	108,425	4,191,253	194,944	2,678	14,362,411	28,329	41,952	3,526	14,498	15,560	19,591	70,667	6,126	437,743	18,283	19,515,986

Source: Statistics Canada, International Trade Division

Maine and Massachusetts together receive almost 50 percent of the salmon and lobster export from New Brunswick. Thus it would be very difficult to divert these products from existing transportation modes to air, because of distance and existing services.

3.7.1.2 Imports

The data received from Statistics Canada concerning import quantities contained over 39,000 individual shipment records. Again, the data were structured and analyzed using dBase IV. When all movements pertaining to the air mode were extracted and scrutinized, it was found that no individual product stood out as a major import commodity. The results are depicted in Figure 3.19, which shows the proportions of commodities being imported into New Brunswick via air services. As shown, if all industrial equipment and parts are aggregated then they represent 61 percent of all commodities being imported by air. Various materials and lumber/paper represent a further 11 percent each. The lumber/paper category is a designation of Statistics Canada.

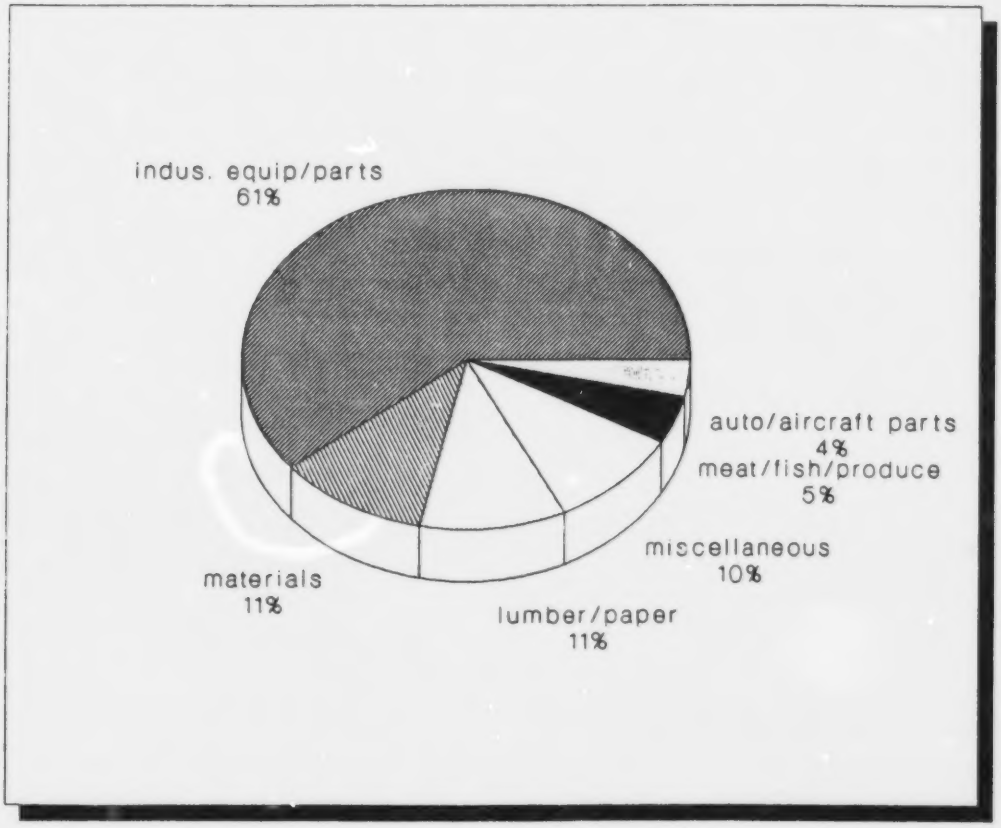
Furthermore, the origin by state was examined for air imports and the results which were found are shown in Table 3.19. As seen, New York was the origin of the most air imports by value, representing over 14 percent of the total U.S. market. California was second with over 13 percent of the total air import market for New Brunswick.

TABLE 3.19

IMPORTS FROM THE U.S. BY AIR

State	Value of Imports ($)	Percent
New York	4,180,864	14.4
California	3,844,567	13.3
Illinois	3,252,599	11.2
Massachusetts	3,158,216	10.9
Maine	2,626,652	9.1
Kentucky	1,699,345	5.9
Texas	1,510,550	5.2
Florida	1,213,508	4.2
Pennsylvania	1,035,630	3.6
Others	6,420,497	22.2
Total	28,942,428	100.0

U.S. Air Imports to N.B. -1989



Source: Statistics Canada, International Trade Division

FIGURE 3.19

The more popular products imported from New York by air included semi-coke, data processing machines, sound signalling equipment, and electrical parts. Air imports from California were largely made up of mechanical gears and aircraft parts. Nearly two-thirds of what was imported from Illinois was either offset printing machines or parts for them. The majority of commodities imported from Massachusetts was gas turbine engines or related parts. The bulk of what came from Maine by air was rolls of fine paper, while cardboard waste and scraps accounted for approximately one-tenth of air imports. Furthermore, nearly $200,000 worth of sardines were imported by air from Maine. Gas turbine engines are the main commodity imported by air from Kentucky, with rubber, fuel pumps, and mechanical instruments representing the majority of other products.

It is seen that the products being imported into New Brunswick by air from throughout the United States are varied in both composition and place of origin. Targeting any specific market as a cargo backhaul for any proposed air service would be difficult given the diversity of imports currently moving into New Brunswick by air.

3.7.2 Shipper Survey

Nine of New Brunswick's largest shippers of fresh salmon or lobster were surveyed as part of an exercise to identify potential cargo movements available for a proposed air passenger service to New England. As previously established, fresh salmon and lobster currently account for nearly one-half of all air cargo exports to the United States.

Table 3.20 identifies the nine individual shippers who were surveyed, in addition to the specific product being shipped, its destination, the quantity, and present mode of transport. As shown, and as expected, Boston is by far the most common U.S. destination for these time-sensitive seafood products.

As previously shown on Table 3.17, the total quantity of fresh salmon shipped to the United States from New Brunswick in 1989 was 1,832,558 kilograms. The total weight of fresh salmon shipped by those surveyed in Table 3.19 amounts to 1,795,465 kg which, not accounting for industry growth since 1989, indicates that the vast majority of fresh salmon shippers had been surveyed. The total mass of fresh lobster shipped to the United States had been shown to be 3,038,866

TABLE 3.20

NEW BRUNSWICK SHIPPER SURVEY

Shipper	Product	U.S. Destination	Quantity (kg/year)	Mode
Deer Island Salmon	Fresh Salmon	Boston, New York Beyond 1 Days Drive	170,455 45,455	Truck Air
Westmorland Fisheries	Live/Cooked/ Frozen Lobster Frozen Crab	Boston	1,227,275	Truck
Association Cooperative des Pecheurs de L'Ile Ltee	Frozen Fish, Crab, Shrimp Lobster	Boston	2,727,275	Truck
Connors Bros.	Fresh Salmon Fresh Salmon	Boston Montreal, Toronto New York	397,730 N/A	Truck Air
Atlantic Silver Ltd.	Fresh Salmon	Boston Philadelphia	681,820 227,275	Truck Truck
Sea Farm Canada Inc.	Fresh Salmon	Boston	272,730	Truck
Paturel's Seafood Ltd.	Live Lobster	Boston (some to Me., NY)	227,275	Truck
Buctouche Fish Market	Frozen Lobster	Maine, Boston	477,275	Truck

kilograms. Since some of the respondents aggregated quantities of fresh lobster with other products, it is unclear as to what proportion of the total market was captured in the survey.

The shipper survey, together with the export cargo data clearly indicates that Boston is the most common U.S. marketplace for New Brunswick seafood products. During the shipper survey the respondents were asked whether their products are being redistributed in Boston for points beyond. The shippers generally indicated that most of their products are redistributed to points throughout the United States, but that few details are known because brokers handle the actual dispersements. One shipper further clarified that his product (fresh salmon) was redistributed for points concentrated in the central and southern United States. Of those who knew the proportion of their products which are being redistributed in Boston, the amount indicated ranged from 75 to 100 percent.

The overwhelming consensus among the shippers interviewed is that it is not economical to ship seafood products to any destinations inside a 24-hour truck service. In fact, most will truck as far west as Toronto and south to New York City.

Two of the eight shippers surveyed indicated an interest in air service, Deer Island Salmon Ltd. who presently use the air mode, and Westmorland Fisheries. Deer Island Salmon Ltd. noted that air was only used for shipments which were required for destinations beyond a single day's drive. Specific destinations or volumes were not given. Westmorland Fisheries indicated they would use air to ship 227,275 kg of live lobster to Boston annually. This potential market should be further investigated in an attempt to divert to air.

Connors Brothers are currently using air service to ship to Montreal, Toronto, and New York and did not indicate a desire for services to the New England area. Both shippers who felt they would use a proposed air service indicated that again Boston is the desired U.S. destination. There seemed to be no desire on the part of the shippers to have service provided to points beyond the seafood brokers in Boston.

3.7.3 Potential Cargo Volumes

Sections 3.8.1 and 3.8.2 have established the order of magnitude of existing transborder air shipments and the potential for air cargo service among aquaculture shippers. Discussions with the carriers themselves have identified some interesting problems which could inhibit the development of a productive air cargo service between New Brunswick and New England.

Representatives of Air Canada indicated that within the Atlantic Region, Canada Post was the single largest customer of air cargo service. As indicated by Canada Post representatives, all mail that is destined to the United States from within Atlantic Canada is either routed through Halifax or Saint John. Newfoundland and Nova Scotia are the catchment areas for the Halifax hub, while Prince Edward Island and New Brunswick transborder mail is consolidated in Saint John. From Saint John, the mail is either carried to Boston on Air Atlantic's two daily flights, or trucked to Bangor. All mail from either Prince Edward Island or New Brunswick that is destined to northern or eastern Maine is sent from Saint John by truck to Bangor. The remainder of transborder mail is sent by air to Boston and redistributed for the United States hinterland. For example, mail from Fredericton to Portland, Maine is trucked to Saint John, flown to Boston, and finally trucked to Portland.

Canada Post indicated that since Boston is used as the major gateway to the United States for mail originating from the Atlantic Provinces, any proposed service to another destination would not be useful to them. Furthermore, should a direct service between Moncton and Boston be established, for example, the volumes of mail would be too small to justify reconfiguring their distribution network. However, they indicated that during busy periods of the year they had experienced capacity problems with the DASH 8 aircrafts serving the Saint John - Boston route. For example, when American Hockey League teams use the service, there is no capacity left in the cargo hold once the baggage and equipment is loaded. Hence, from Canada Post's perspective the only improvements that could be made to transborder services would be either increased frequency between Saint John and Boston or the use of larger aircraft.

It is seen from the above discussion that Canada Post is presently utilizing existing air service to distribute mail from New Brunswick to the Boston area and U.S.

points beyond. Mail is primarily transported from New Brunswick and Prince Edward Island origins by truck to Saint John. There appears to be a possibility that some of this market could be captured if feeder services to Saint John, as a means to improve air passenger service, were scheduled.

Presently the express industry between New Brunswick and New England is very competitive. Air express is in competition with the less expensive truck industry which can reach many New England markets almost as quickly as the scheduled air carriers. Furthermore, many of the major carriers such as United Parcel Service, and Federal Express have customs officials located in their own distribution facilities to expedite the clearance of incoming packages. If a scheduled passenger service were to establish an air express service to the New England area, the clearance of the packages would have to be done at the U.S. airport, necessitating the customer to pick up the parcel in person. The problem of clearing customs would position the air carrier at an extreme disadvantage relative to the established express carriers. At present, Federal Express operates its own aircraft into the cargo center in Moncton, while United Parcel Service operate their own fleets in centers such as Montreal and Toronto.

The potential for carrying aquaculture products such as fresh salmon and lobster was previously shown in Section 3.8.2. One shipper indicated they would ship 22,730 kg of fresh lobster annually to Boston if a service were available.

It was found through discussions that a customs clearance fee of $80 - 100 per shipment is charged for cargo moving by air into the United States, while a fee of only $40 is charged for an entire truckload, regardless of whether the movement is a consolidation of smaller shipments. This differential in customs clearance fees greatly inhibits the movement of cargo by air as the cost is distributed over much smaller shipment sizes than can be accommodated by the truck mode. This is an area which should be investigated more fully to see if improvements can be made to assist air cargo shipments by scheduled passenger services.

The carriers also pointed out that if passenger loads are reasonable on an aircraft such as a DASH 8, there will be little space left over in the cargo hold once baggage is loaded, for cargo. The total cargo capacity for a DASH 8 is 8.5 cubic metres or 910 kilograms.

In summary, after having explored all avenues of potential air cargo sources, it is estimated that the potential revenue that might be realized from a new or improved service to New England would fall within the range of 1 to 4 percent of total passenger revenue. This is based on industry experience and the type of aircraft.

3.8 Potential Impacts on Proposed Services

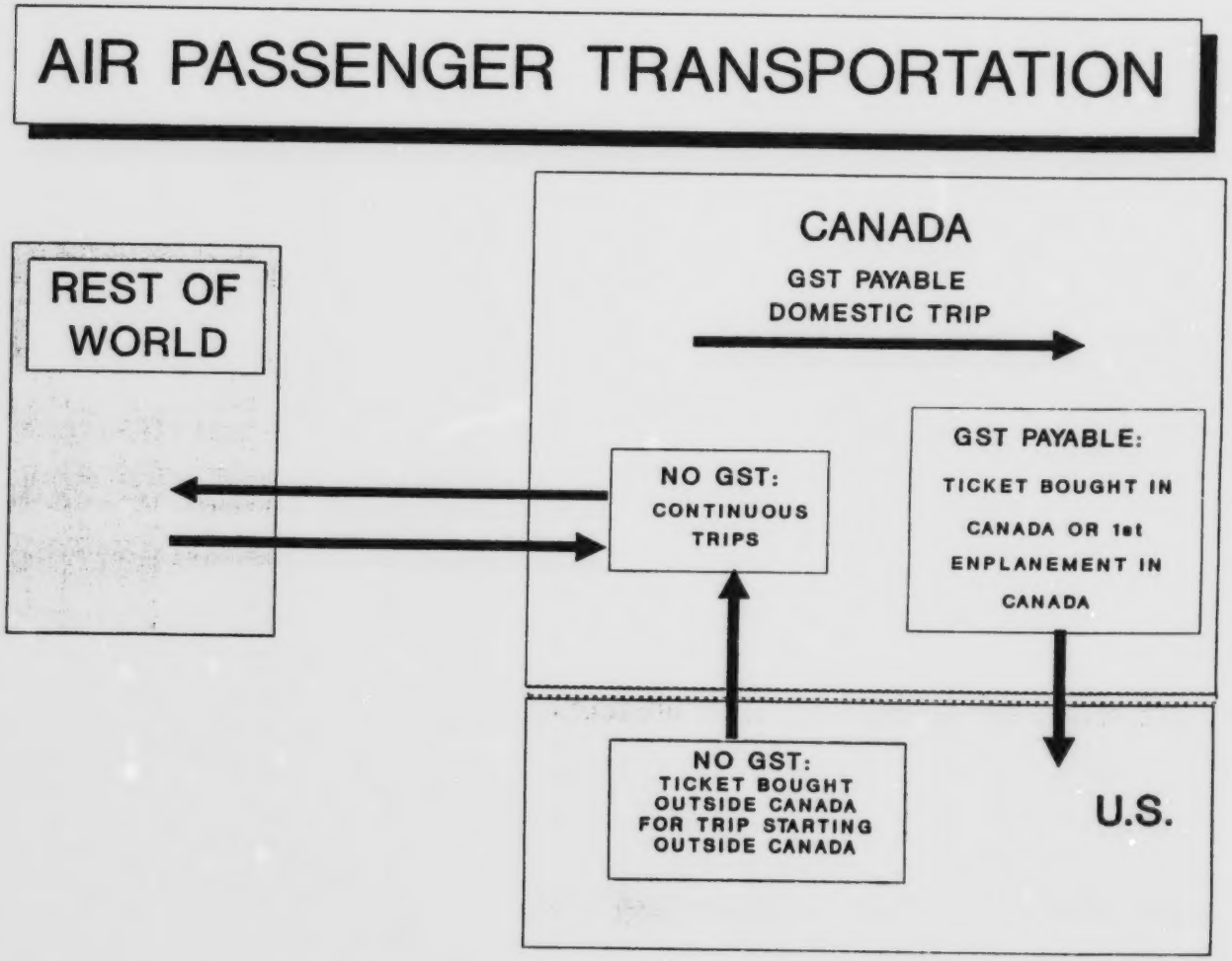
A number of extraneous factors have surfaced recently which will potentially affect the feasibility of establishing either a new or improved air service between New Brunswick and New England. The following sections discuss some potential implications arising from the establishment of the Goods and Services Tax, the modification of the Air Transportation Tax, Transport Canada's proposed Cost Recovery Policy, and the concept of "open skies".

3.8.1 Goods and Services Tax (GST) and Air Transportation Tax (ATT)

The implementation of the Goods and Services Tax (GST) on January 1, 1991 has had specific implications on the movement of people and goods both domestically and internationally. Generally, passenger transportation has been affected with GST being charged on air services for travel both domestically, to the U.S. (except Hawaii), and St. Pierre and Miquelon provided the ticket is either purchased in Canada or the first enplanement is in Canada (see Figure 3.20). Other trips including those to countries other than the U.S. and those originating outside Canada are exempt from the GST.

Freight transportation is generally only subject to GST if movements are originating and destined to Canadian points. Freight charges of $5 or more for movements to/from points outside Canada are exempt from the tax (i.e. zero rated). Furthermore, movements that are merely a segment of a continuous inbound or outbound freight shipment are also GST exempt.

The Air Transportation Tax (ATT) was implemented to recover the costs of flight navigation systems and airport facilities provided by Transport Canada. Prior to January 1, 1991 the tax was calculated as 10 percent of the base ticket price plus a flat fee of $4, to a maximum of $50 on flights within Canada or to the U.S. (except Hawaii) and St. Pierre and Miquelon. Coincident with the implementation of the



PROPOSED APPLICATION OF GST

FIGURE 3.20

GST, the ATT was modified and is now calculated as 7 percent of the ticket price plus a $10 flat fee, to a maximum of $40. The net result as shown in Figure 3.21, is that for air tickets with a base price less than $200, the new ATT will be higher thereby exacerbating the total ticket cost. Furthermore, the GST is applied after the inclusion of the ATT, resulting in tax cascading. As shown in Table 3.21, prior to January 1, 1991 a ticket with a $100 fare would cost $114 after the application of the ATT. Under the new tax structure, the same fare will be compounded with $17 ATT plus $8.19 GST for a total cost of $125.19 (an 11.1 percent increase overall). A similar analysis on a $1000 fare showed the total cost with ATT added to be $1,050 in 1990, and $1,112.80 in 1991 with ATT and GST added (a 6.6 percent increase in the total fare). Figure 3.22 is a depiction of the comparison of 1990 effective tax rates with 1991 rates. The 1991 rates are based on the modified ATT along with the GST.

While no manufacturer's Sales Tax (MST) was applied to any transportation service, its replacement with the lower GST may indirectly lower the cost of transportation through reduced prices on fuel, office equipment, supplies, vehicles, and other equipment used in the air industry.

Air travel from Canada to overseas will have an ATT consisting of a $40 flat fee applied, up from $19. Air tickets bought outside Canada for travel to Canada will continue to have a $19 flat fee applied.

The changed structuring of fuel taxation will also affect the air industry. Prior to January 1, 1991 two federal taxes were applied to fuel purchases, namely the MST and excise taxes. The implementation of the 7 percent GST replaced the 13.5 percent MST. Furthermore, carriers are able to recover GST expenditures which should result in significant savings. However an excise tax discount of 1.5 cents per litre of aviation fuel has been eliminated. The net result should be a lower tax burden on fuel for the air industry.

It is of note that GST paid by business travellers for hotels, air travel and auto rentals is 100 percent refundable, while meals and entertainment are 80 percent refundable.

A representative of Canadian Airlines was contacted concerning analyses that were carried out on behalf of the airline to determine the projected effect that the

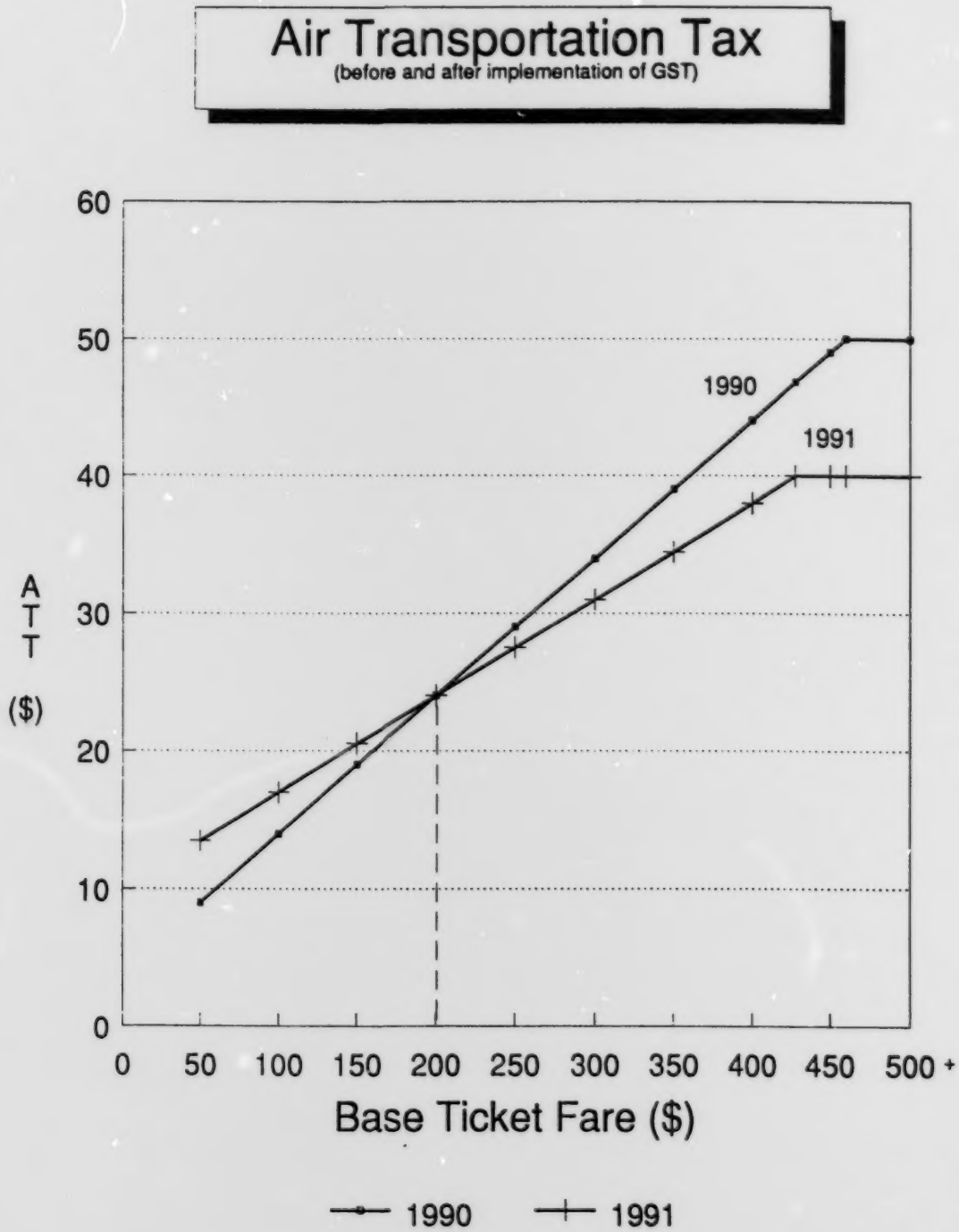

Air Transportation Tax
(before and after implementation of GST)
60
50
40
30
20
10
0
ATT
($)
1990
1991
0
50
100
150
200
250
300
350
400
450
500 +
Base Ticket Fare ($)
1990
1991

FIGURE 3.21

TABLE 3.21

EFFECT OF THE ATT AND GST ON AIR FARES

Base Fare ($)	Old ATT ($)	Old Effective Rate of Tax (%)	New ATT ($)	GST ($)	New Effective Rate of Tax (%)	Price Change (Tax Included) (%)
60.00	10.00	16.7	14.20	5.19	32.3	13.3
80.00	12.00	15.0	15.60	6.69	27.8	12.8
100.00	14.00	14.0	17.00	8.19	25.1	11.1
200.00	24.00	12.0	24.00	17.00	19.0	7.0
300.00	34.00	11.3	31.00	23.17	18.0	6.7
400.00	44.00	11.0	38.00	30.66	17.1	6.2
430.00	47.00	10.9	40.00(max)	32.90	16.9	6.0
460.00	50.00(max)	10.8	40.00	35.00	16.3	5.4
500.00	50.00	10.0	40.00	37.80	15.5	5.6
1,000.00	50.00	5.0	40.00	72.80	11.2	6.3
2,000.00	50.00	2.5	40.00	142.80	9.1	6.6
3,000.00	50.00	1.7	40.00	212.80	8.4	6.7
EXAMPLES:[1]						
Fredericton - Toronto						
604.20	50.00	8.3	40.00	45.09	14.1	5.8
Fredericton - Halifax						
366.60	40.66	11.1	35.66	28.16	17.4	6.3
St. Leonard - Montreal						
518.40	50.00	9.6	40.00	39.09	15.3	5.6
Charlo - Montreal						
562.40	50.00	8.9	40.00	42.17	14.6	5.7
Saint John - Boston						
412.20[2]	45.20	11.0	38.84	31.56	17.1	6.1
Moncton - Toronto						
575.60	50.00	8.7	40.00	43.09	14.4	5.7

[1] Base Fares for examples are typical return "regular economy" fares.

[2] Does not include U.S. taxes.

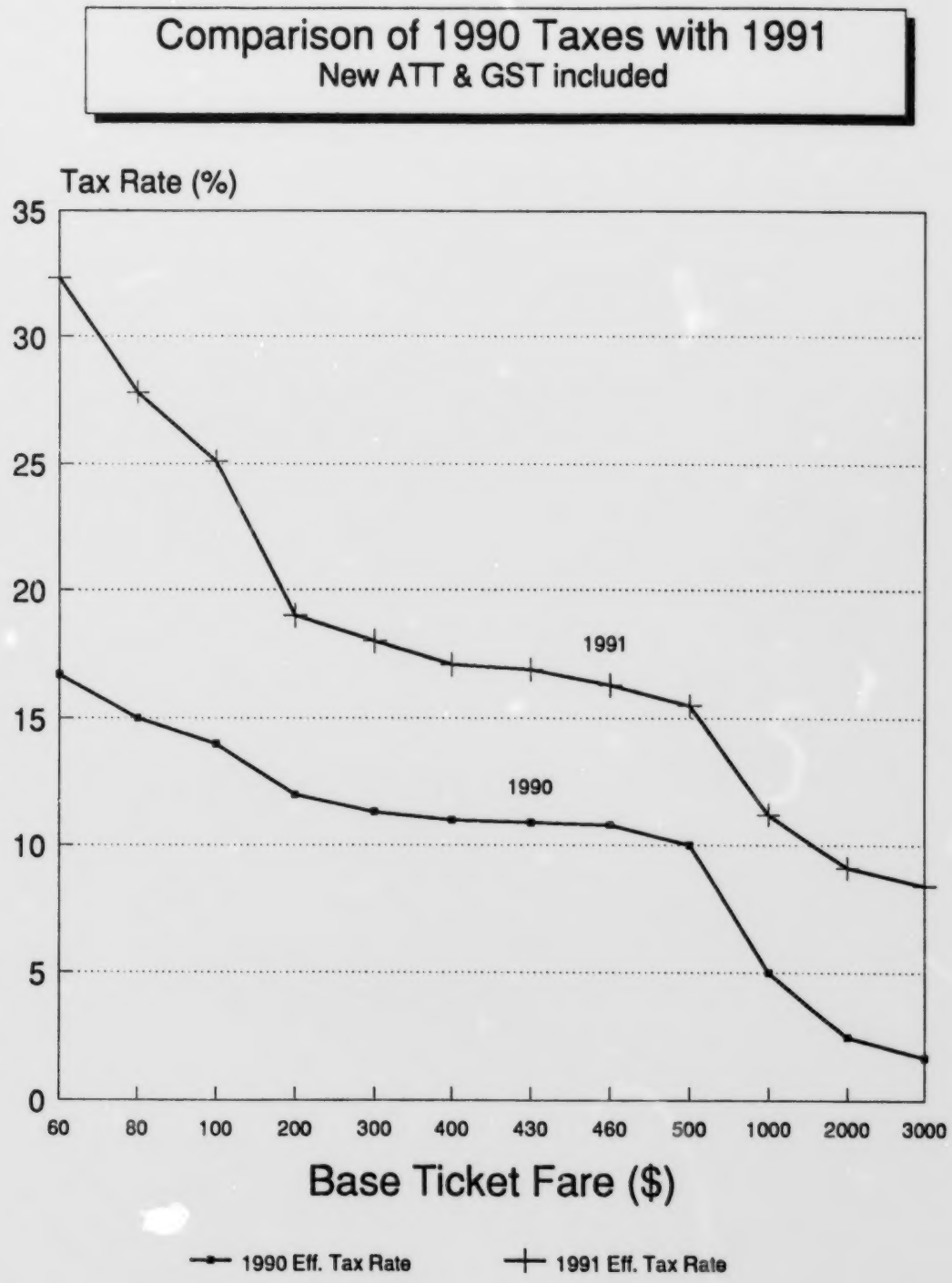

Comparison of 1990 Taxes with 1991
New ATT & GST included
Tax Rate (%)
35
30
25
20
15
10
5
0
1991
1990
60
80
100
200
300
400
430
460
500
1000
2000
3000
Base Ticket Fare ($)
1990 Eff. Tax Rate
1991 Eff. Tax Rate

FIGURE 3.22

implementation of GST is expected to have on passenger loads. Mr. Nick Portman of the Calgary office was responsible for the analysis. He indicated that since business travellers are able to fully recover the GST component of the cost of air travel, the net affect on the volume of business passengers is expected to be negligible. Mr. Portman did, however, express concerns over the impact that is expected on the leisure component of air travellers. It was noted that their experience has been that the price elasticity for pleasure travellers ranges between -0.75 and -1.25. Subsequently, the net effect of the implementation of the 7 percent GST will mean that a corresponding decrease in pleasure passengers ranging between 5 and 9 percent could be expected. It was further noted that those who are travelling on longer stage-lengths are subject to the higher end of the price elasticity range.

Canadian Airlines have not done any specific analyses which address the impact of the GST on the transborder movement of air passengers, other than that previously outlined. There is a perception that some travellers may drive across the border before enplaning for air service, whether they are destined to Canada or the United States, to avoid paying GST for the purchase of an air ticket. However, as Mr. Portman pointed out, the incremental difference in the price of an air ticket generated with the inclusion of the GST would in very few instances create a cost effective reason for driving to a U.S. airport to obtain air service. A price-sensitive leisure traveller would not save on the cost of a ticket unless the U.S. base price was significantly lower to begin with.

A cursory analyses of the potential for New Brunswick pleasure travellers to drive to Maine to avoid GST was undertaken. It was found that for an April 1st flight from Fredericton to Montreal for example, a regular economy return ticket's base price would be $476.60. Add to the base price $40 for the ATT and a further $36.16 for GST, and the total cost is $552.76. The cost for the same class air ticket from Bangor to Montreal return is $455.35 (Cdn). A savings in the cost of the air ticket of nearly $100 can be incurred if the traveller were willing to drive to Bangor, however the GST only accounts for $36.16 of this savings. While nearly $100 can be saved in the price of the air ticket, the cost of operating a mid-sized automobile from Fredericton to Bangor would be equal to the surface distance of approximately 560 kilometres (return) multiplied by the operating cost of 26.5 cents per kilometre, equalling $148.40. The net savings for a single traveller, not accounting for the value of the individual's time, would therefore equal $100 -

$148.40 = -$48.40, or an increase of approximately 8.8 percent of the initial ticket's cost.

A similar cost analysis for Fredericton to Toronto return versus Portland to Toronto return was undertaken (given the lack of good service from either Presque Isle or Bangor to Toronto). Similarly, it was found that the domestic price for the airfare totalled $689.19 versus $665.12 (Cdn.) for the same class of service from Portland. The cost of operating a vehicle to Portland and back amounts to $243.80, again resulting in a loss of $219.73 for an individual, not accounting for the value of one's time to drive to and from Portland. Furthermore, the same analysis can be carried out for a first-level discount fare ticket for the same city-pairs. A first-level discount ticket from Fredericton to Toronto return was found to cost a total of $579.08, while a similar class service from Portland was available for $338.90 (Cdn.), a difference of $240.18. However, after accounting for the cost of operating a vehicle to Portland the net savings, exclusive of an individual's time, amounts to only $3.62.

Interestingly a regular economy fare of $622.74 (all taxes included) was found for service between St. Leonard and Toronto compared with $580.14 from Presque Isle to Toronto. Although the fares are comparable, service from Presque Isle is circuitous involving long delays in Boston.

The preceding cursory analyses illustrate that the incremental effect of GST on the domestic cost of air service cannot be of any significant consequence when considering the net effect on the diversion of passengers to Maine airports.

3.8.2 Cost Recovery Policy

A recent proposal presented in a Transport Canada discussion paper entitled "Proposed New Cost Recovery Policy: Phase II Discussion Paper", may or may not have far reaching effects on any proposed transborder service from a New Brunswick airport. It is presently proposed that the policies be implemented in the summer of 1991, however, it is more likely this will not come about until at least the fall. There appears to be very contrasted views of the implications of a move towards a user-pay system for the provision of air facilities and services. The one assumption which seems to be the basis for such a myriad of views is to what extent or level cost recovery will take place.

The ultimate goal of the proposal is to increase the cost recovery percentage for the provision of facilities and movements presently provided by the federal government for air services at airports. It is proposed to increase airport landing fees, parking fees, and general terminal fees, in addition to implementing a new fee for the provision of air navigation systems.

Presently Transport Canada recovers approximately 70 percent of its air mode expenditures. In the fiscal year 1987/88, expenditures were $1,228,700,000 while revenues were $864,000,000. While this represents a shortfall of $364,700,000 the department does recognize the fact that there are many non-attributable costs which users should not be expected to pay because they are incurred in the broader public interest. Some non-attributable costs include: regulation and enforcement of safety; costs for servicing state and military aircraft; costs associated with "immature" airports; non-operational direction and administration; and policy and coordination. At present it is estimated that non-attributable costs represent 14 percent of total costs. This leaves a remainder of 16 percent of total costs which are not recovered, a portion of which are proposed to be collected under the new policy.

User charges and concession revenues each presently account for 25 percent of attributable costs, while the remainder is gathered through the Air Transportation Tax (ATT). The ATT is applied to airline ticket purchases and is implemented to recover the costs of flight navigation systems and airport facilities. Revenues generated from this source are not earmarked for any specific cost area but are treated as general revenues. As previously discussed, the ATT has been recently modified in concert with the GST.

Transport Canada recognizes the fact that different airports are at different "maturity" levels and are hence positioned accordingly to recover their own attributable costs. For example, Toronto's Lester B. Pearson's International Airport is considered a mature airport having handled more than 18 million passengers in 1987 and was able to recover all of its costs. At the other end of the scale is an airport like Earlton which only handled 4,000 passengers for the same period and subsequently could only recover 4 percent total attributable costs. Consequently, Transport Canada has categorized its airports into one of five maturity levels ranging from "mature" (handling more than 1.5 million passengers annually) to "basic" (handling less than 40,000 passengers per year). The level of cost recovery

of attributable costs which are to be recovered at an airport will depend on its level of maturity. For example, a "nearly mature" airport such as Moncton, will be expected to recover all cost elements (i.e. O&M, depreciation, and cost of capital), while a "basic" airport such as St. Leonard will only be required to collect the cost of its site labour. Other "nearly mature" airports in Canada include St. John's, Quebec, Thunder Bay, Saskatoon and Regina. Both Fredericton and Saint John are referred to as semi-mature.

Nearly mature airports are categorized as those having handled between 250,000 - 1.5 million annual passengers. The variance of traffic volumes among the 10 airports falling into this category would suggest a cut-off of 250,000 between nearly and semi mature airports is too low. Any significant adjustment upwards would result in Moncton being recategorized as a semi mature airport, subsequently requiring it to recapture a smaller proportion of its operating costs.

With airports falling under different maturity levels, and specific user fees being related to an aircraft's weight or seating capacity, the actual charges will be site and aircraft specific. In other words user fees at Fredericton will be different than those in Moncton, and fees for a DASH 8 will differ from those for a B-727 at either airport.

The eventual impacts of the proposed cost recovery policy have been assessed by a number of concerned parties. Having reviewed the arguments presented by Transport Canada, the Air Transport Association of Canada, the New Brunswick Department of Transportation, and the carriers, it appears that no consensus as to the eventual outcome has been reached by any of those concerned. The primary reason for such a disparity in the projected impacts lies with the basic assumption as to what level of cost recovery is to be achieved.

Transport Canada has based all of their analyses on the underlying assumption that additional cost recovery for 40 million dollars will be achieved in the first fiscal year of implementation of the program. As a general guide the cost for such facilities as landing fees, terminal fees, and aircraft parking is to be increased by a maximum of 12.7 percent where justified. It is estimated that user fees represent only about 3 to 5 percent of an airline's total expenditure, so an increase of roughly 12.7 percent is thought to be negligible from Transport Canada's point of view.

The extent of increased cost recovery beyond the initial year of implementation is not stated by Transport Canada despite direct inquiry by concerned groups. However, Transport Canada has released the "bottom line" of the cost increases for those New Brunswick airports which are affected. It must be noted that the airports in Charlo and Chatham are leased by Transport Canada to their respective municipalities and are subsequently not obligated to adhere to any policies or guidelines implemented by the department. Similarly, the Bathurst airport is operated by the Bathurst Regional Airport Commission and again the administrators are not required to follow the policies established by Transport Canada. The St. Leonard airport is operated through the implementation of a management contract, so its operators do have to adhere to any changes in user charges. Moncton, which has the busiest airport in the province, is at the disadvantage of having its airport categorized as a "nearly mature" airport which obligates it to collect fees for the costs associated with air navigation systems (ANS). These include costs associated with services dedicated to approach, take-off, air field movements, enroute flight information and advisory services, air traffic control and navigational aids between airports, and approach and aerodrome control services. The Fredericton and Saint John airports do not fall into this category and are consequently not subject to ANS charges.

Table 3.22 presents the expected increase in fare per arriving passenger should the cost recovery program be implemented at the level proposed for the first year. As shown, the incremental cost per ticket is in most cases negligible. All costs were based on an average 50 percent load factor. It is noted that Moncton realizes the largest increase of all airports as a result of its classification as a "nearly mature" airport and responsibility for costs associated with the air navigation systems. St. Leonard experiences the smallest incremental cost increase primarily a result of its classification as a "basic" airport and thereby responsible for site labour costs only. Finally, it is seen that the cost increases are identical for Saint John and Fredericton because they both fall under the same maturity classification.

TABLE 3.22

FARE INCREASE DUE TO COST RECOVERY PROPOSAL
FIRST YEAR OF IMPLEMENTATION
(DOLLARS/ARRIVING PASSENGER)

Aircraft	Fredericton	Saint John	Moncton	St. Leonard
DASH 8	0.62	0.62	1.12	0.14
Bae 146	0.85	0.85	1.20	0.24
B737	0.85	0.85	1.09	0.25
B727	0.94	0.94	1.20	0.32

While the preceding incremental costs associated with the implementation of Transport Canada's cost recovery policy appear insignificant, other interest groups have presented their views founded on the basis of eventual full cost recovery levels, rather than an arbitrary fiscal target of 40 million dollars proposed for the first year.

A recent seminar held by the University of New Brunswick's Transportation Group saw Mr. Gordon Sinclair, President and CEO of the Air Transport Association of Canada present the findings of his organization's analyses. Drawing on the results of test cases representing a typical regional carrier using propjet aircraft and a mainline operator using jet aircraft, the potential impacts of the proposed policies were presented. It was shown that the current proposal by Transport Canada for the first year of implementation would result in an average increase in total operating costs for propjet services of 1.9 percent while jet services would increase by 1.4 percent. However, if full recovery of attributable costs were to be implemented under the proposed structure, then propjet services would see operating costs escalate by 20.3 percent while jet services would increase by 15.3 percent.

Mr. Sinclair further noted that the existing price elasticity for air service falls within the range of -1.0 to -1.5. In other words, if the price increased by 20.3 percent for propjet services such as those in the Atlantic Provinces, then passenger demand could decrease by as much as 30 percent.

Mr. Sinclair further expressed concern that the smaller regional airports, such as those found in New Brunswick, will incur the greatest burden as a result of the proposed policies because many of these types of airports operate well below cost recovery levels. Furthermore, the Maritimes is an area where many short haul flights to small communities exist. There is subsequently the potential for undue burdens to be levied upon the regional carriers who land much more frequently in any given day than the major carriers operating the long stage length and higher yield flights.

ATAC has prepared its own cost recovery policies which result in cost increases of approximately one-half of those presented by Transport Canada. The net result is that for mainline carriers, operating costs will increase by no more than 1.5 percent (resulting in a passenger loss of up to 2.2 percent). Regional operating costs would be expected to increase by approximately 6 percent which would result in a loss of up to 10 percent of existing passengers. ATAC has recommended that they work with Transport Canada to find ways to lessen the impact on regional carriers. Furthermore, they recommend that any policy be implemented gradually so that the annual reduction in passenger demand be kept at a level of less than 1 percent.

The region's two regional carriers, Air Nova and Air Atlantic have each stated that the implementation of the proposed increased user charges would cost them 1 million dollars each during the first year. These analyses have been disputed by officials at Transport Canada who believe that the impacts reported by the regional carriers are largely over estimated based on incorrect assumptions made by the carriers. Nevertheless, given the fact that neither carrier has yet to show a profitable year, any adverse impact may lead to the reduction in services, which is contrary to the goal of regional economic development and the cost recovery's objective of not interfering with economic development.

From the perspective of transborder services, several concerns have been raised regarding the impacts of the proposed cost recovery program. Initial concerns were raised pertaining to the cost recovery procedures for U.S. pre-clearance space, loading bridge fees, and rental charges for ticket counter/office space in the air terminal building. However, the existing structure that is in place for the charging of pre-clearance space and rental charges will essentially remain unchanged. Charges for loading bridges will be set at the same level as that of carrier-owned

bridges. Over and above the fact that there will be an increase in airport and aviation user fees for domestic as well as transborder flights, there will be no disproportionate impact felt by transborder carriers.

Of interest is the perception that some domestic carriers would choose routings which involved as much U.S. airspace as possible in order that they avoid the proposed ANS fees. This notion was dispelled when it was proposed that a carrier operating between two domestic points would be charged ANS fees whether they are routed through U.S. airspace or not. Conversely, U.S. carriers are not to be charged the domestic ANS fee even if a portion of their routing is over Canadian airspace as long as they are operating between two U.S. points.

The underlying concept of exactly what level of cost recovery is to eventually be achieved is still a major point of contention. As previously discussed, Transport Canada has repeatedly stated that it does not have any targets beyond the initial year of implementation which will see an increase of 40 million dollars in user fees, or approximately 11 percent of the actual annual shortfall. The air industry's representatives, ATAC, believe that full cost recovery will eventually be sought and have presented their analyses of impacts which will result from such a level of implementation. What the actual level of cost recovery will be is unknown at this time, however it is almost certain that there will be some increase in the operating costs for carriers which can only compound the problems that non-profitable carriers are experiencing, and discourage the implementation of transborder services from New Brunswick.

3.8.3 Canada - United States Air Services Bilateral Agreement

The Canada - U.S. transborder air travel market is the largest air passenger market in the world, generating some 13 million annual trips and in excess of $2.0 billion in revenue for scheduled and charter carriers. By way of comparison, the next closest in size, the U.S. - United Kingdom market generates approximately 9 million trips annually.

Although the first commercial air services agreement between Canada and the United States was signed in 1949, the first comprehensive bilateral agreement was negotiated in 1966. In 1974 the 1966 agreement was amended with an Exchange of Notes which added some new routes and provided for the establishment of

preclearance customs and immigration facilities at certain airports in both countries. In 1984 a further Exchange of Notes cleared the way for initiation of new transborder services in low density markets. The so-called Regional Local Commuter Services (RLCS) agreement ensures automatic approval of proposed services which meet certain criteria.

Apart from the marginal amendments negotiated in 1974 and 1984, the bilateral has remained, for the most part, unchanged since 1966. Attempts to negotiate a new comprehensive agreement in 1980 and 1985 both ended in failure. It is not surprising, therefore, given the size and importance of this market, and the recent signing of the Canada - U.S. Free Trade Agreement, that there is growing pressure on both sides of the border to negotiate a new agreement which will provide for more service and more competition.

A new round of negotiations was initiated very recently. A variety of complex issues are to be discussed including the need for new routes, the degree of competition to be permitted, the possible granting of cabotage rights (the right of a carrier to transport a foreign country's domestic traffic), accessibility to airport facilities and landing slots, the pre-clearance agreement, and so forth. Before attempting to analyze the potential implications of a new Canada - U.S. Air Services Agreement for service in Atlantic Canada and New Brunswick in particular, it is useful to examine some recent trends which are shaping the airline industry globally.

3.8.3.1 Trends in the Airline Industry

The structure of the airline industry throughout the world has changed dramatically in the past 5 to 10 years. The adoption of market-oriented policies in most developed countries precipitated a major re-structuring of what was once a highly regulated industry.

Two significant trends have become apparent as the industry evolves; 1) the formation of global networks, 2) increased industry concentration. Airlines throughout the world are forming partnerships at an unprecedented rate. The nature of the partnerships range from simple marketing agreements to equity swaps. Some alliances incorporate agreements on such matters as code sharing in computer reservations systems, route rationalization, common frequent flyer

programs, joint purchasing of fuel, catering and aircraft and other equipment utilization.

Scandinavian Airlines System (SAS) has been one of the leaders in the globalization trend, consummating agreements with 11 carriers, and in the process increasing its network from 50 to 250 destinations served. Delta Airlines, Swissair and Singapore have exchanged a 5 percent equity position in each other. This partnership gives each carrier an extensive route network in each of the three major trading regions of the world.

The globalization trend is also evident in airline computer reservation systems. For example American Airlines' Sabre system has recently been linked up with Amadeus, a system owned by four European carriers. It is also anticipated that these global networks will expand their product lines beyond the travel industry into other information technology.

The globalization trend in combination with other competitive factors is also leading the industry towards increased industry concentration. There is a definite trend towards strong consumer and travel agent preference for larger carriers, particularly those which enjoy the advantage of global networks. Depending upon the nature of the global alliance, carriers can realize some economies of scale creating a strong incentive for the formation of mega carriers. Frequent flyer programs have become a major force in influencing loyalty of travellers, again in favour of larger carriers. Carriers which have established extensive "hub and spoke" networks benefit from strong control of feed traffic which enables them to efficiently offer high frequency of service to numerous destinations. The larger carriers have also developed sophisticated yield management systems which have become a must in today's pricing environment.

Nowhere has the trend towards increased concentration been more evident than in the U.S. In 1984, six years after deregulation, there were 38 large carriers competing in the industry. This has consolidated to the point where 7 or 8 carriers control approximately 90 percent of the market. The big three, American, Delta and United each have revenues in the $8-10 billion range. By way of comparison, Air Canada ranks 20th in the world with revenues of $2.6 billion (U.S. $'s) in 1989.

If as expected, the U.S. industry consolidates to approximately 5 mega carriers serving a population of about 250 million, this amounts to one airline per 40 million people. In western Europe (approximately 350 million people) it is expected that 6 or 7 carriers will dominate the market, ie. one airline per 50-60 million people. In Japan the domestic market of 110 million is dominated by Japan Airlines and All Nippon Airways.

Given these trends, it is understandable why there has been public debate recently about whether Canada with a domestic market of some 25 million people can sustain two flag carriers. There are many possible scenarios with respect to the future of these carriers in the international marketplace. The outcome of the Canada - U.S. negotiations could be influential in shaping their future strategies. The key uncertainty is how all of these developments will impact upon the domestic industry structure which has emerged since 1984.

3.8.3.2 The Canada - U.S Negotiations

As stated above, there are several tough issues to be resolved before a new agreement can be successfully concluded. A brief description of the critical issues follows.

There is a broad consensus on both sides that the current bilateral agreement is antiquated given the changes in the industry since the first comprehensive agreement was negotiated in 1966. Many transborder city-pair markets do not have direct service. For example there is no direct service between Toronto and Washington, or between Atlantic Canada and Florida. There are no direct routes from anywhere in Canada and major U.S. cities such as Atlanta, St. Louis, Cincinnati, Orlando, Fort Lauderdale, New Orleans, San Diego and Phoenix.

The intensity of competition in many markets is also constrained by the current bilateral. Given the pro-competitive policies of each country, there is a desire to increase competition, but the positions of the two parties begin to diverge in respect of how to achieve this objective.

The Americans have proposed an "Open Skies" concept which would permit unfettered competition on any transborder route included in the bilateral. The two major Canadian carriers, Air Canada and Canadian Airlines International Ltd.

(CAIL), are both strongly opposed to such an approach, arguing that for a variety of reasons the U.S. carriers would enjoy an unfair competitive advantage in most markets.

The primary concern of the Canadian carriers relates to the market power U.S. carriers derive from the "hub and spoke" networks they have developed since their industry was deregulated in 1979. The U.S. giants have all established powerful hubs (eg. American at Dallas - Fort Worth, United at O'Hare, Delta at Atlanta). Typically, 1 or 2 carriers dominate traffic and airport facilities at each hub, with traffic being fed from numerous spokes. Currently, there are approximately 60 large and medium hubs throughout continental U.S. connecting to over 200 large communities.

The competitive advantage which these hubs yield to U.S. carriers on transborder routes is the ability to offer Canadian-originating traffic one-stop, same-plane service to a large number of destinations beyond the hub, or, a convenient connection with the same carrier at the hub. The ability to serve a large number of destinations off the transborder route (in contrast with Canadian carriers who can only serve the transborder city pair or offer a less convenient connection with another carrier), enables the U.S. carrier to offer higher frequency of service, because in addition to the local traffic, they can capture the beyond traffic to other destinations connected to the hub. A good example of this advantage is the Toronto - Chicago market where American and United offer a combined total of 11 wide-body flights per day, whereas Air Canada, the lone Canadian carrier on this route offers only 4 DC-9's. On the Montreal-Boston route, Delta offers 5 flights per day, some of which are wide-body, while Canada's presence in the market is Air Alliance offering only 2 DASH 8 flights per day. Delta's advantage of operating a hub out of Boston discourages a Canadian carrier on this route.

The preclearance agreement tends to enhance the hub-system capabilities of U.S. carriers. Having cleared U.S. Customs and Immigration in Canada, it is much easier for passengers to connect easily with other services at the hub without delay or perhaps enjoy one-stop same-plane service to a U.S. destination which does not have Customs and Immigration inspection facilities.

One of the proposals which has been advanced as a means of offsetting U.S. hub power is the granting of cabotage rights. For the Canadian carrier, cabotage rights would enable them to participate in traffic destined beyond U.S. hubs.

The Americans have resisted cabotage in previous negotiations (including in the recent negotiations on their bilateral with the United Kingdom) on the basis that it would have precedent-setting implications in their bilateral relationships with other countries. If they grant it to Canada how could they refuse it to others? Furthermore, it is probable that they would insist on obtaining comparable cabotage rights for their carriers in Canada, which would be troublesome because a large proportion of our domestic traffic routes through our few hubs, most of which are located in close proximity to the border.

Air Canada was a proponent of cabotage in previous negotiations. Their position appears to have softened somewhat, calling for examination of a limited cabotage exchange. CAIL remains strongly opposed to cabotage and has proposed that any exchange of routes in a new agreement should be structured on a market segment basis. The proposed regime would involve five market segments with different rules for each. On so-called "High Density Routes" (eg. Toronto-New York), two carriers from each country would be designated, increasing competition and service, but preventing increasing congestion by opening such markets up to a probable flood of new entrants. "Established Business Routes" (eg. Halifax-Boston) would have one designated carrier per country, thereby eliminating monopoly routes and creating opportunities for new entrants. "Leisure Routes" would be permitted unlimited designation. Since they are at the extremities of the U.S. route network (eg. California, Florida), the hub power phenomenon does not come into play to the same degree as other routes. "Ready for Development Routes" would be single track routes with each country selecting a city pair on a rotational basis. "All Cargo Routes" would be immediately available for a more liberal treatment. Specific thresholds would be established for each route category. Over time, as traffic grows, routes would be re-classified as they meet the threshold of the next highest category.

Another contentious issue which has grown in importance in recent years is the question of accessibility to airport facilities and landing slots, particularly at the major U.S. airports. U.S. airports are controlled by local authorities. Gates and other essential airport facilities such as ticket counters, baggage facilities are

controlled to a large degree by exclusive-use long term leases. Landing/take-off slots are controlled at several key U.S. airports. At Laguardia, JFK, O'Hare and Washington National, additional slots can be purchased through a lottery at a starting price in excess of $1.0 million, although some international slots must be provided. Here again the U.S. carriers have an advantage in that they have the flexibility to transfer slots from unprofitable domestic routes to transborder routes. Hence establishment of services by new entrants is extremely difficult, creating a very effective competitive weapon for incumbent carriers which dominate each hub.

Both Air Canada and CAIL have taken a strong position that any new agreement must address the airport access problem. Valuable traffic rights should not be exchanged in isolation of the accessibility issue. It should be noted that one possible solution to this problem would be the formation of a strong alliance between our carriers and the U.S. giants. This might require the relaxation of current foreign ownership restrictions to permit a U.S. carrier to take a major equity position in a Canadian carrier.

The balance of trade in air services between the two countries is also likely to be a major negotiating point. Canada has alleged that the Americans enjoy a favourable balance (in terms of airline revenues) which has grown to in excess of $500 million per year, despite the fact that approximately 60 percent of the traffic originates in Canada. They also point out that one of the principles upon which the 1966 agreement was based was "equality of opportunity and economic benefits for both sides". The following recent quote by the U.S. Chief Air Negotiator summarizes their position on the balance of trade issue:

> "The call for an equitable exchange of economic benefits is not consistent with the concept of a liberal agreement, implying as it does, a pre-determined 50/50 distribution of benefits."[1]

It is clear that the American view is that the distribution of benefits should be allocated by market forces, not government restrictions.

In summary, although there appears to be a strong will in both countries to obtain a bilateral air services agreement which is more compatible with the Canada-U.S

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[1] "Air Transport in the Emerging Global Environment", Slivitski, V.S., Transport Canada Fourth Aviation Forecast Conference, Ottawa, Ontario, November 27, 1990.

Free Trade Agreement, there are many tough issues which will have to be resolved including the protection of Canadian carriers, an issue recognized by both sides. From the Canadian perspective, the government will have to seek an appropriate balance between the interests of our carriers who want a "level playing field" and a "bigger share of the pie", and the interests of communities/consumers who want better service and more competition. This will not be an easy task and to be sure, whatever the outcome, it could have a major impact on the future structure of the domestic airline industry in this country.

3.8.3.3 Implications for Atlantic Canada

If a new bilateral is successfully negotiated, it seems likely that the "winners" in a more market-driven air services agreement would be the larger communities which currently have the demand, but not the opportunity for direct transborder service. In Canada this would include our eight major hubs (Halifax, Montreal, Ottawa, Toronto, Winnipeg, Calgary, Edmonton and Vancouver).

In Atlantic Canada, the best opportunity for improved service would appear to be the Halifax-Florida market which is currently served over Montreal and Boston. The largest transborder market in the region is Halifax-Boston averaging approximately 70 passengers per day. Note that a component of this volume could be passengers driving from New Brunswick and enplaning in Halifax. By way of comparison the largest transborder market is Toronto-New York with an average daily volume of approximately 1,030 passengers.

To the extent that transborder service improves at the major Canadian hubs (particularly Halifax, Montreal and Toronto), Atlantic Canadian travellers will benefit. However, the opportunities for new direct transborder service from communities other than Halifax are limited at best in the short term. It should be noted that the 1984 RLCS Agreement referred to above ensures that carriers from either country will automatically be authorized to initiate new routes which meet the following criteria:

- cities not currently linked by negotiated routes;

- at least one of the cities must have a metropolitan population of fewer than 500,000 in Canada or one million in the United States;

- the distance between the cities is no more than 400 statute miles in central Canada (east of Thunder Bay) and the United States and 600 statute miles in other parts of the two countries;

- use aircraft of 60 seats or less.

To a degree, therefore, "Open Skies" already exists for communities which meet these criteria (note: all communities in New Brunswick would qualify). Indeed, Air Atlantic and Air Nova's services to Boston were initiated under this agreement.

The major uncertainty for Atlantic Canada is how the domestic industry structure will be affected by the international trends outlined above and the eventual outcome of the Canada-U.S. negotiations. Most communities in the region have benefitted significantly from the re-structuring of the domestic network which has taken place since economic regulatory reform was introduced in 1984. Better matching of aircraft to market density, the alliance partnerships between Air Nova and Air Canada, and Air Atlantic and CAIL, along with the emergence of Halifax as a regional hub, have all contributed to improvements in service quality and stability. To the extent that this structure is de-stabilized, particularly if international forces and the Canada-U.S. bilateral lead to greater concentration in the industry, there is some risk that service levels and the intensity of competition in the region could be reduced.

From a New Brunswick perspective, it is apparent that the primary benefits of a new Canada-U.S. Air Services Agreement would be derived from any improvement in transborder services at Halifax, Montreal, Toronto and possibly Ottawa. A relaxation of the 60 seat and 600 mile restrictions in the RLCS Agreement might offer some long term benefit. However, in the short term it is unlikely that a new bilateral agreement of any kind would in itself lead to the introduction of new direct services. Should better transborder service develop in Halifax, New Brunswick will benefit as a result of increased opportunity through connecting

flights. However, economic development would not be as substantial in New Brunswick unless a new direct transborder air service were to be implemented.

3.8.4 Summary

A number of relevant factors including the GST, ATT, Transport Canada's Cost Recovery Policy, and proposed changes to the Bilateral Agreement have been evaluated in the context of transborder air service for New Brunswick. The recent implementation of the GST and the new ATT has had the combined effect of increasing outbound air fares for transborder services by approximately 5.5 to 7 percent, while tickets purchased for transborder service originating from the U.S. will not be affected. It is unknown at this point what the net impact will be in terms of reduced passenger levels, given the potential for reduced costs to the airlines through savings on such items as fuel and equipment derived from the GST. Furthermore, it is not expected that significant numbers of passengers will drive to Maine to access air service for other Canadian destinations to offset the impacts of the GST.

Transport Canada's Cost Recovery Policy as proposed, will increase air ticket costs by $0.14 to $1.20 per passenger, depending on the particular New Brunswick airport and type of aircraft used. However, Transport Canada's policy assumes an initial cost recovery target of $40 million, which represents only 11 percent of full cost recovery. Some industry representatives believe cost recovery could result in price increases of as much as 20.3 percent if full recovery is implemented. Ultimate target levels for cost recovery have not been presented by Transport Canada.

The prospect of a new bilateral agreement between Canada and the United States is unlikely to provide increased opportunity for direct transborder services for New Brunswick. A more likely scenario derived from the implementation of an "open skies" policy would result in improved transborder services at Halifax, Montreal, Toronto and possibly Ottawa, which would indirectly afford better transportation service to New Brunswick.

CHAPTER 4.0

PHASE II - NEW BRUNSWICK USE OF MAINE AIRPORTS

4.0 PHASE II - NEW BRUNSWICK USE OF MAINE AIRPORTS

A current alternative available to New Brunswickers travelling to the United States is to drive to an airport in New England to enplane on a U.S. carrier. Presumably the advantage is either a cost savings, better service, or both. As part of this study's Terms of Reference, it was incumbent on the study team to estimate the order of magnitude of annual trips made in such a manner so the potential for diversion to the air mode could be assessed. Initially, it was proposed to extract this information from four separate sources: discussions with U.S. carriers, the Maine Department of Transportation Aviation Branch, a Chamber of Commerce mail-out survey, and Travel Agents. As the study proceeded a past survey carried out by Air Atlantic was discovered and subsequently further analyzed, the results of which are presented in Section 4.5.

4.1 U.S. Carrier Survey

Preliminary investigations during the proposal stage of this study indicated that U.S. carriers would co-operate by providing annual passenger volumes of those who had booked through New Brunswick agents. However, it was later discovered that the manner in which all carriers keep computerized records prohibits easy retrieval of the information needed for this component of the study. Interviews were carried out with district and national marketing managers for Delta, Continental, and Northwest Airlines. It was found that computerized information fields, including a passenger's name, phone number, flight origin and destination are typically kept on a flight by flight basis by all carriers. Although a passenger's phone number would indicate their true origin, the work effort involved to retrieve the data for every individual flight was prohibitive. However, carrier representatives for both Delta and Continental were interviewed at the Bangor and Presque Isle airports, the results of which are presented herein. Northwest Airlines, who serve both Bangor and Presque Isle airports as well, did not offer any meaningful information, however other sources have shown that very few flights on this airline are made from those originating in New Brunswick.

Presque Isle

The Delta representative at the Presque Isle airport estimated that up to 10 passengers per day from New Brunswick use their service, operated by Business Express. It was further clarified that the vast majority of New Brunswickers

originating from the Presque Isle airport are from the Edmundston to Centreville area and most are destined to points in the United States, particularly the southern states.

The Continental representative in Presque Isle indicated that they handle on average, 1 to 3 passengers per day from New Brunswick. It was confirmed that the New Brunswick catchment area for their services is generally, Edmundston to Centreville.

Bangor

Delta's operations in Bangor are shared by both Delta flights and those operated by Business Express. This segmentation further complicated the representatives's ability to estimate the quantity of New Brunswickers using their services so no estimates were offered.

Continental's representative in Bangor also would not venture to estimate the quantity of passengers they handle originating from New Brunswick.

Portland

None of the carriers could offer estimates of the number of New Brunswick passengers that they carry throughout the year.

4.2 Me.D.O.T. Air Transportation Division Interviews

The Director of the Maine Department of Transportation's Air Transportation Division was interviewed to determine if any alternative studies have been carried out which would identify origin-destination information of air passengers travelling between New Brunswick and Maine or New England. It was found that no past studies have been undertaken which specify the Canadian component of air volumes.

The State of Maine is currently having a Systems Plan developed for their various airports. As part of the Systems Plan the catchment areas for the larger airports throughout the State were to be identified. Therefore, by identifying the "true origins" of those using Maine's airports, supposedly the quantity of New

Brunswickers would be determined. However, after contacting the consulting firm who is developing the Systems Plan it was found that this information was not determined as part of this exercise.

Officials with the Federal Aviation Administration (FAA) in Washington were contacted to determine if any "true origin-destination" studies had been done for any of Maine's airports. It was found that none had been previously undertaken.

Airport managers at the Presque Isle, Bangor and Portland airports were contacted to determine if any terminal surveys had been conducted as part of a marketing exercise on behalf of the airports themselves. Although none have been done, it was found that the Portland airport periodically conducts license plate surveys of their parking lot to determine where air passengers are driving from to use the airport. After reviewing the survey data, it was determined that on average only 1 or 2 vehicles per day that are parked are from Canada. On rare occasions 3 - 4 vehicles from Canada could be observed in the parking lot. The capacity of the parking lot is 700 vehicles. It was further clarified that of the Canadian plates, most are from either New Brunswick or Nova Scotia, while the odd one shows up from Quebec and Ontario. In summary, it can be estimated that on average there might be 1 vehicle per day from New Brunswick parked in the lot in Portland. Given an assumed trip duration of 3 - 4 days, and auto occupancy of 2 persons, this would translate to approximately 210 annual trips from Portland by New Brunswickers.

License plate surveys have not been conducted at the Presque Isle or Bangor airports.

4.3 Chamber of Commerce Survey

The effort extended towards a survey of the business members of the Chamber of Commerce throughout New Brunswick has previously been documented in Section 3.4.3. However, information that was solicited which detailed air trips made by New Brunswickers originating from Maine airports is presented in this section.

As previously discussed, this survey is by no means statistically significant and admittedly biases the characteristics of those from the Moncton area. However, from the 104 surveys completed and returned, it was found that collectively 120

trips originating from a U.S. airport had been made by the respondents. It was found that Bangor is by far the most popular gateway since it was used as the origin for 72 percent of all air trips beginning in Maine. Presque Isle was the next most popular gateway as it was used for 16 percent of all trips. Boston was used by 10 percent while the remainder (2 percent) flew out of Portland.

Despite the intent of the survey to capture work related transborder trips, the single most common destination for those who flew out of a Maine airport was Florida at 28 percent. New York was next with 17 percent, followed by Boston with 10 percent. The remaining 45 percent of trips which had originated in Maine are destined to areas scattered throughout the United States.

4.4 Travel Agent Survey

Data on characteristics such as seasonality, origin, destination, frequency, and fare class were collected for trips taken by New Brunswickers originating from a U.S. airport through a survey of travel agents. In all, 9 New Brunswick agencies were interviewed while 4 Maine agencies were surveyed. The New Brunswick agencies included: Tweedie and Barry (Edmundston), Brunswick Travel (Edmundston), Maritime Marlin Travel (Woodstock), Guy R. Day and Son (St. Stephen), Blaine Thomas Travel (Fredericton), Maritime Marlin Travel (Fredericton), CAA (Saint John), Goligers Travel (Saint John), and Harvey's Travel (Moncton). Maine agencies contacted were: Days Travel, Fleet Travel, and Hewins-Carlson, all of the Bangor area, as well as Don Towle Travel of Presque Isle.

The agencies were for the most part chosen at random. Tweedie and Barry of Edmundston was chosen because many of the U.S. carriers had indicated that those from the northwest area of New Brunswick had booked through this firm. The level of detail of the information provided by each of the travel agencies varied. Three agencies, Harvey's Travel, Tweedie and Barry, and Blaine Thomas Travel, allowed the interviewers to scan each individual ticket sold by the firm for the entire year of 1990. Subsequently each ticket with a U.S. origin was counted and flight specific information extracted. The other firms either estimated or counted the annual quantity of tickets sold for Maine (or Boston) departures and provided general information concerning such variables as destinations, purposes, and seasonality.

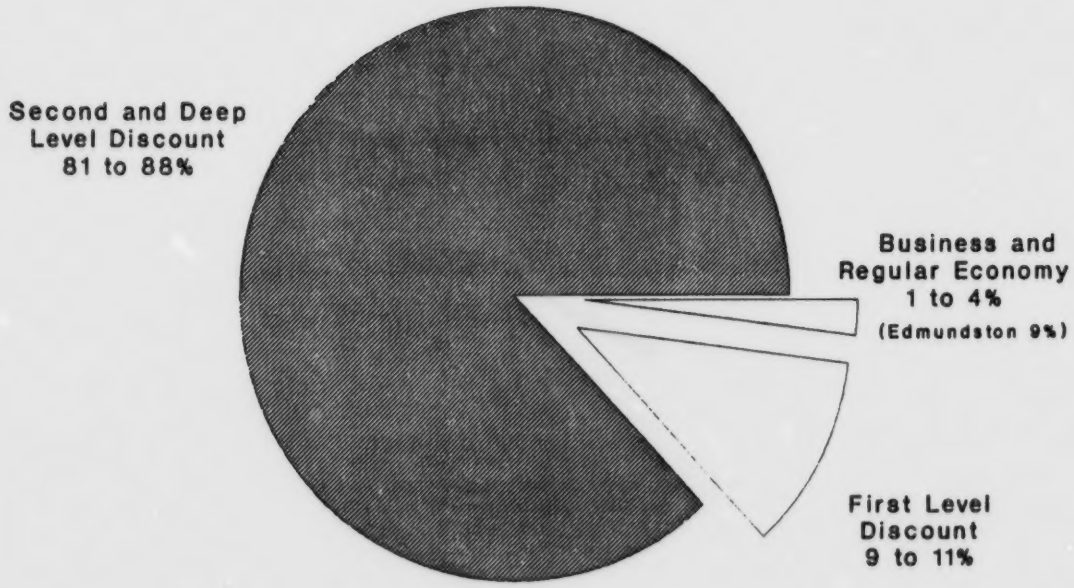
The quantity of tickets sold for travel originating from the United States is summarized in Table 4.1. As shown, the St. Stephen and Woodstock agencies sold the greatest number of tickets for travel from a Maine airport. The St. Stephen agent noted that the vast majority of their business is oriented to the Bangor airport and that any new service to New England would be of little consequence to existing travel patterns in that area. The Woodstock agent interviewed noted that their business is split between Fredericton, Bangor, and Presque Isle. Most domestic travel originates out of Fredericton, while Woodstock transborder traffic normally drives to Bangor, and those further north (Centreville area) will typically fly from Presque Isle. The Edmundston agents indicated a split of their passengers' origins between Presque Isle and Quebec City. Most domestic travel is initiated from the Quebec City airport for those in the Edmundston area, while transborder travel usually begins from the Presque Isle airport.

Surveys undertaken at the major centers of Fredericton, Saint John, and Moncton show the annual volume of tickets sold for a U.S. origin range from 100 to 429 per agent. Although the total annual number of tickets that each agency sold was asked to be kept confidential, the proportion sold for a U.S. origin ranged between 1.5 and 7.9 percent for these areas. However, many more agencies need to be surveyed before average proportions can be used to accurately estimate total annual volumes of trips originating from a New England airport.

An analysis of fare classes was undertaken for those agencies which allowed individual tickets to be reviewed. It was consistently found that between 81 and 88 percent of all tickets sold for a U.S. origin fell into either the H-class (second level discount), or V-class (deep level discount). A further 9 to 11 percent bought B-class tickets (first level discount). Only 1 to 4 percent were found to use Business or Regular Economy class fares, with the exception of the Edmundston area which showed upwards of 9 percent. The distribution is shown in Figure 4.1.

The actual U.S. airports used by those driving from New Brunswick are summarized in Table 4.2. This table has been based on those travel agents surveyed in depth. As shown, the airport used greatly depends on the actual New Brunswick origin. Edmundston travellers rely almost exclusively on the Presque Isle airport when originating from the United States, while passengers from either Fredericton or Moncton usually use Bangor. Surprisingly, 41 percent of those from Moncton are travelling to Boston for air service. While no agent in Saint John was

N.B. Use of U.S. Airports
Ticket Fare Classes



Source: Travel Agent Survey

FIGURE 4.1

TABLE 4.1

NEW BRUNSWICK USE OF U.S. AIRPORTS

Agent	City	Annual Tickets For U.S. Airport
Tweedie and Barry	Edmundston	173
Brunswick Travel	Edmundston	N/A[1]
Maritime Marlin	Woodstock	Approx. 700
Guy R. Day	St. Stephen	Approx. 1,200
Blaine Thomas	Fredericton	429
Maritime Marlin	Fredericton	325
CAA	Saint John	Approx. 100
Goligers	Saint John	375
Harveys	Moncton	137
Days [2]	Bangor	Approx. 50
Fleet [2]	Bangor	Approx. 30
Hewins-Carlson [2]	Bangor	Approx. 100
Don Towle Travel [2]	Presque Isle	Approx. 300

1 Estimated volume to be 75 percent of total business.

2 Maine agents who sold tickets to N.B. residents for travel from Maine airport.

surveyed in the detail that enabled this type of analysis, both agencies indicated that Bangor is by far the most popular U.S. origin airport.

TABLE 4.2

U.S. AIRPORTS USED BY NEW BRUNSWICKERS

U.S. Airport	Edmundston	Fredericton	Moncton
Presque Isle	93%	15%	2%
Bangor	1	70	56
Portland	0	3	0
Boston	6	12	41
Other	0	0	1

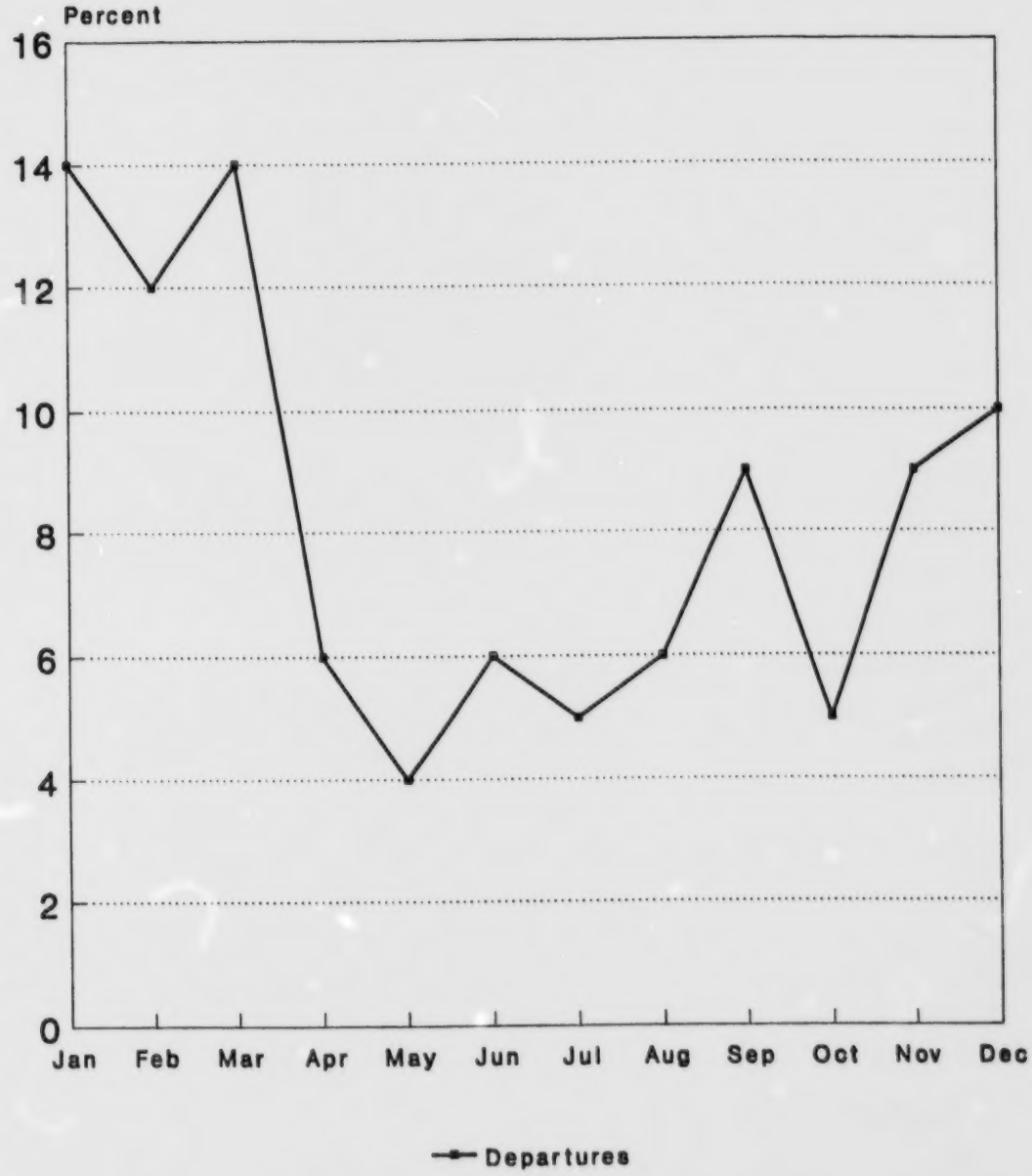
Final destinations were recorded for the in-depth surveys undertaken at Tweedie and Barry, Blaine Thomas, and Harveys Travel. Trips to either Florida or "sun destinations" in the southern states consistently accounted for 61 to 69 percent of all trips originating from a U.S. airport. This is significantly lower than the approximately 90 percent originally perceived. The remaining destinations were scattered throughout the U.S. showing no other popular destinations.

A weighted average of the number of trips taken by month was determined, again for those surveys in-depth. The results are depicted in Figure 4.2. As shown the busiest period is between December and March. In fact, 50 percent of all travel occurs during these four months. Obviously, the effect of the "sun destination" trips affects the seasonality of travel.

4.5 1986 Air Atlantic Survey

Once this study was initiated, it was discovered that in 1986 the University of New Brunswick's Transportation Group had conducted a province-wide survey of households on behalf of Air Atlantic. With the permission of Air Atlantic, the raw data were obtained and subsequent analyses were conducted. The survey gathered information concerning previous transborder trips made by members of the household. Most importantly, each household was asked whether individuals had driven to a U.S. airport to access service offered by a U.S. carrier. If the participant responded positively, the U.S. gateway was identified as well as the

N.B. Use of U.S. Airports
Seasonality



Source: Travel Agent Survey

FIGURE 4.2

ultimate destination, for each of the survey areas (Fredericton, Moncton, Saint John, Edmundston, Chatham, and Dalhousie). Border communities such as Woodstock and St. Stephen were not included in the survey as it was felt that none of this traffic could be diverted to a potential Air Atlantic service.

In all, over 1,975 households were surveyed, and the information was expanded using the survey sub-area populations as the basis for expansion. Having growthed the data to represent surveyed area totals, information concerning surface trips to U.S. airports was extracted, the results of which are presented in Table 4.3.

As shown from the analysis, it was estimated that nearly 3,200 person-trips were made from the main New Brunswick areas surveyed by driving to a New England airport. It was found that Bangor is the most common gateway attracting almost half of those driving from New Brunswick. Of those driving to Bangor, over 50 percent originate from Fredericton, while another 26 percent drive from Saint John. Presque Isle was found to be the next most popular New England gateway, utilized almost exclusively by those originating from the Edmundston area. The Boston airport attracted 519 person-trips, including 203 from Fredericton, 193 from Moncton, and 101 from Saint John. In all, Bangor was the most popular destination for trips originating from Fredericton and Saint John, while Monctonians had driven equally to either Bangor or Boston.

It was found that nearly 3,200 persons drove to a New England airport, representing a little less than 9 trips per day. The most common city-pair, that being Fredericton - Bangor, represented 852 person-trips annually, which when expressed in daily terms is 2.3 trips.

Of the 3,199 annual person-trips, there were 782 (24 percent) trips made to a Florida destination. The next most common single destination was Boston, where 195 persons drove to either Presque Isle or Bangor to access air service to Boston. There were 458 trips made with an international destination, while the remainder 1,764 (55 percent) were trips to different miscellaneous destinations within the United States.

It was previously thought that the vast majority of those using air services originating in New England are destined for the "sun destinations" and sensitive to service cost. However, a cursory look at the destinations sought out by those

TABLE 4.3

ESTIMATED ANNUAL USAGE OF U.S. AIRPORTS
(PERSON-TRIPS)

	New Brunswick Origin						
	Fredericton	Moncton	Saint John	Edmundston	Chatham	Dalhousie	Total
U.S. Gateway:							
Bangor	852	193	405	98	40	0	1,588
Presque Isle	41	0	0	488	0	0	528
Portland	446	0	0	16	0	0	463
Boston	203	193	101	0	0	22	519
Other	81	0	0	0	20	0	101
Total	1,623	386	506	602	60	22	3,199

Source: Air Atlantic Household Survey, 1986.

using the Maine and Boston airports would indicate otherwise. Although the data used to determine trip purposes for those driving to a Maine airport were somewhat restrictive, indications are that approximately 40 percent were on a business trip, 23 percent were on a vacation (two-thirds of which occur in the winter), while the remainder indicate the trip purpose as "other".

4.6 Summary

Without comprehensive terminal or licence plate surveys being undertaken at all of Maine's larger airports, an estimate of the volume of air passengers driving from New Brunswick is extremely difficult to estimate. Perhaps the most accurate estimates are those determined using data from the 1986 Air Atlantic survey. However, given that the survey area excluded most border communities (including Grand Falls, Woodstock, St. Stephen) and rural areas, estimates must be assumed to be conservative, particularly for use of the Presque Isle airport. The survey estimates that 528 passengers using Presque Isle's airport are from New Brunswick, however, discussions with airline representatives indicate annual usage to be more in the order of 3,000 to 4,000 passengers annually. The survey estimates New Brunswick usage of the Portland airport to be 463 passengers annually. License plate surveys recently conducted at the airport indicate usage to be approximately 210 which confirms the relative order of magnitude of New Brunswick passengers using Portland. With the exception of Presque Isle, passenger volumes presented in Table 4.3 should be considered as the best available estimates of New Brunswick's use of Maine airports albeit the volumes are somewhat conservative.

It was found that the vast majority of those driving to a U.S. airport from New Brunswick are buying second and deep level discount tickets. Given the nature of these trips, it would be essential that a new or improved transborder air service compete on a cost basis, if some of these trips are to be diverted from the surface. It has been shown that this would be very difficult to do.

Bangor was found to be by far the most popular U.S. gateway for those originating from the Fredericton and Saint John areas. Surprisingly, both the Air Atlantic Survey and the Travel Agent survey indicated that those from the Moncton area use both the Bangor and Boston airports equally.

CHAPTER 5.0

PHASE III - POTENTIAL FOR FLY-DRIVE TOURIST TRAFFIC

The high potential travellers that would tour Canada were identified to likely be retired or older, college educated, and from urban centres. Furthermore, their interests which are somewhat different than for touring travellers in general include: dining at a variety of restaurants, cultural activities, visiting small towns and villages, strolling about, being by the ocean, and shopping. It should be noted that New Brunswick can offer all these activities. They were found to hold a more positive view of Canada than U.S. touring vacationers in general although they believe a shortage of first-class food and accommodations exists in this country. Any marketing efforts to promote New Brunswick as a destination for fly-drive or fly-charter tours should be targeted to this strata of the U.S. market.

The *1988 Canadian Travel Survey* was found to contain no information concerning inbound trips from the United States. Review of a 1986 study entitled *A Needs Evaluation of the New Brunswick Tourism Industry for Results of the U.S. Pleasure Travel Survey* conducted for Tourism Canada revealed that the findings presented were not directly applicable to the context of this study.

Although information such as activities, destinations, origins, expenditures, and durations is contained within the data collected for the *1989 Air and Auto Exit Surveys* undertaken by the New Brunswick Department of Tourism, Recreation, and Heritage, it was felt that the 1985 Tourism Canada information presented herein is more directly related to the identification of potential fly-drive or fly-charter traffic.

5.2 Charter Operator Interviews

Interviews were conducted with a number of the larger charter companies presently operating in New Brunswick and the Atlantic Provinces to gather information concerning the potential for fly-drive or fly-charter passenger volumes. Operators that were interviewed include:

1. Tauck Tours, Westport, Connecticut
2. Collette Tours, Pautucket, Rhode Island
3. Tour Brokers International, Cleveland, Ohio
4. Aquila Tours, Saint John, New Brunswick

A summary of information collected from each of the operators is presented herein.

5.0 PHASE III - POTENTIAL FOR FLY-DRIVE TOURIST TRAFFIC

With nearly 100 million people living in the United States within a two-day drive from New Brunswick, and over 12 million in the New England area alone, a tremendous market of potential tourists exists for the New Brunswick industry. In fact, 25 to 40 percent of existing summer tourist traffic to New Brunswick originates from the United States. Given the size of the U.S. market, there exists a potential to supplement passenger volumes on a proposed or improved air service between New Brunswick and New England with tourists partaking in either a fly-drive or fly-charter package. To this end, a number of past studies were reviewed in conjunction with a survey of the larger tour operators.

5.1 Literature Review

In 1985, Tourism Canada initiated a study entitled *U.S. Pleasure Travel Market, Canadian Potential.* The study was founded on the results of a total of 8,873 in-home personal interviews conducted in each of the nine U.S. Census Divisions. The interviews were designed to collect basic information concerning pleasure travel characteristics and attitudes towards Canada as a destination from the U.S. public. Once the data were gathered and analyzed, Canada's opportunities for capturing the U.S. pleasure market were identified. Of significance to this present study are the opportunities outlined for potential touring markets.

The survey indicated that Canada ranked third as a desired destination for a touring trip by Americans. The United States ranked first, while Mainland Europe was considered the second most popular destination. In fact, only 8 percent of those planning a touring trip ranked Canada as the preferred destination. Within Canada, British Columbia is the preferred province to tour, while Nova Scotia and New Brunswick are ranked 5th and 6th, respectively. Nova Scotia was the choice for 0.7 percent of all Americans planning a touring trip, while New Brunswick was the preference for only 0.1 percent of those questioned.

The survey determined that features such as: beautiful scenery, lots to see and do, well-known and popular landmarks, and interesting cities and towns are important attributes for the general touring travellers when choosing an area to tour. Less important features included: "inexpensive activities", "natural - untouched environment", "wildlife not often seen", and "few others go there".

A fly-charter plan is also offered by Collette Tours from the Boston area. Participants of the tour are flown to Halifax, then on to St. John's where a chartered bus provides the land tour. A land tour of Nova Scotia is also often offered as part of this package. Upwards of 40 such tours are offered during a typical season resulting in volumes of nearly 500 passengers.

The operator indicated no interest in air service to New Brunswick given that the emphasis of most of their land-only packages is on Nova Scotia, while their fly-charter operations are felt to be best served through Halifax. A Saint John/St. Andrews tour is being planned, however it is proposed to be a charter bus operation from Boston. Concern was also expressed over the capacity of a deHavilland DASH 8 aircraft in that it only contains a total of 37 passenger seats, while a tour operator requires upwards of 40 (the capacity of a tour bus) for their service alone, exclusive of regular passengers using the air service. Furthermore, tours of this nature typically require deep discount air fares to be competitive.

Tour Brokers International

Tour Brokers International offers charter tours to the Atlantic Canada region from origins in New York State, Pennsylvania, Michigan, and Ohio. Typically, two separate tour types are offered by this operator. A 12-day plan originating from Toronto utilizes rail service to Saint John. Once in Saint John, a chartered bus provides a tour of New Brunswick, Nova Scotia, and Prince Edward Island. The second package is a 12-day fly-charter plan which originates from various points (depending on demand) and flies to Bangor. From Bangor, a chartered bus carries passengers to the various attractions throughout the Maritimes.

In all, the operator only conducted 4 tours with 35-40 passengers per tour to the Maritimes in 1990. However, upwards of 15 tours are planned for the 1991 season, which for this operator is July through September.

Rather than flying to Bangor, then busing to Saint John, this operator would prefer flying into New Brunswick. However, because of cost constraints, the operator has chosen to fly only to Bangor to keep the tour package cost at a minimum. Should inexpensive air service be established either from Bangor, or another New England point, this operator indicated an interest in utilizing it.

Tauck Tours

Presently, two different plans are offered by this operator to the Atlantic Canada region. The first is a New England - Nova Scotia bus tour. The tour originates in either New York or Boston and travels north as far as Portland, Maine where it crosses the Bay of Fundy by ferry to Yarmouth. After touring Nova Scotia, New Brunswick is briefly visited on the return portion of the package. Annual passenger volumes for this particular tour have been upwards of approximately 1,700. Efforts should be directed at increasing the time this tour spends in New Brunswick on its return trip.

The second tour offered by this operator is a fly-charter service. The tour originates in Newark with a McDonnell-Douglas DC-9 Super 80 aircraft normally chartered from Continental Airlines. The aircraft has a capacity for 137 passengers. The flight goes directly to Halifax where three buses are chartered to provide the land tours. There are two separate land tours offered by this operator from Halifax. The first is a tour of both Prince Edward Island and New Brunswick, while the second is of Nova Scotia alone. The service is offered once weekly from June through October and typically accommodates upwards of 1,300 passengers per season.

Presently, the operator is not interested in obtaining air service to New Brunswick. The economic viability of the operation is centred around an air service capable of providing capacity for three bus-loads of tourists destined to the Halifax area. However, it would seem worthwhile to talk to this tour operator with respect to flying into Moncton to begin the New Brunswick and Prince Edward Island bus tour.

Collette Tours

Collette Tours presently offers two bus tour packages from the Boston area to the Atlantic Provinces. Both are very similar to those offered by Tauck Tours. The inbound portion of the tour ferries from Portland, Maine to Yarmouth, Nova Scotia and traverses New Brunswick during the return portion of the tour. Both tours essentially cover the same routings, however, one is a 7 day package while the other operates over a 9 day period. Typically, the tours are offered from mid-May until October, and have served up to 4,000 passengers per season.

Aquila Tours

Aquila Tours is a charter operator based in Saint John and has provided fly-drive packages for tourists from New England in the past. The packages were offered to individuals who flew into either Saint John or Halifax, most of whom came from Virginia and New England. The operator provided a land package usually consisting of a rental car and accommodations at various locations throughout the Maritimes. It was incumbent upon the tourists to arrange their own flights into either Saint John or Halifax. The package is no longer being offered as a result of poor response during past seasons. The best season resulted in approximately 50 individuals using the package, most of whom came through the Saint John gateway.

This operator noted the difficulty of trying to compete on a cost basis with the bus tours operating from the New England area by providing a fly-drive or fly-charter service. Again, the logistic problem was mentioned concerning the capacity of smaller commuter aircraft, such as the DASH 8, in that they only provide a total capacity of 37 when a charter bus tour would require up to 40 passengers. Air carriers are normally unwilling to sell off all seats on a scheduled service to a tour operator and risk losing regular business passengers.

5.3 Summary

Investigations have shown that the potential for significant contributions to passenger loads for a proposed air service arising from tourists partaking in fly-drive or fly-charter tours is limited. The tour operators have revealed that the most popular packages being offered are bus-only tours originating from New England which concentrate mostly on Nova Scotia after crossing the Bay of Fundy on the Portland - Yarmouth ferry. What limited fly-charter tours exist, are routed through Halifax primarily because of the structure of the tour. Most charter operators require that the aircraft be capable of handling 35 - 40 passengers typically grouped for a bus tour.

Although there is as yet no large fly-drive tourist market in the Maritime Provinces, discussions with the tour operators did provide insight into areas where New Brunswick should concentrate efforts in attracting this market. Presently, Tauck Tours offer a once weekly service which involves utilizing a DC-9 Super 80

aircraft with seating for 137 passengers and flying into Halifax to begin a New Brunswick - Prince Edward Island bus tour. This particular tour package could operate just as effectively into Moncton, for example.

Tour Brokers International are planning 15 bus tours of the Maritime Provinces this 1991 season. Some of these tours involve using Toronto as the gateway and rail service to Saint John to begin the bus tour. The other tours fly to Bangor then take a bus from there to Saint John. There appears to be a market that can be investigated by a regional carrier which would involve offering charter service between Saint John and Bangor. This service could be offered at off-peak scheduled service times, thus utilizing aircraft more extensively.

Given the large potential market in the United States, and in particular New England, there is some opportunity for New Brunswick to promote a fly-drive. The key to promoting this type of package is to penetrate large urban markets such as Boston, Hartford, and New York while targeting the retired or older population. Emphasis would be placed on promoting New Brunswick as a place with many cultural activities, unique villages, varied dining, seashores, and shopping.

CHAPTER 6.0

PHASE IV - ECONOMIC OPPORTUNITIES FOR NEW BRUNSWICK

6.0 PHASE IV - ECONOMIC OPPORTUNITIES FOR NEW BRUNSWICK

6.1 Potential Service Improvements

Previous report sections have presented the potential for new or improved air service between New Brunswick and New England. Analyses which compares a new or improved route's competitiveness with existing services, both from a service and cost basis, indicate that Boston is the preferred U.S. gateway for New Brunswick origins. The most optimistic estimates of potential volumes assumes there would be a 25 percent stimulation over and above the existing transborder market and that there would be 2 return flights per day.

Based on this criteria, passenger estimates for Saint John, Moncton and Fredericton on a daily basis are 68, 33 and 14.5, respectively. Northern New Brunswick represents less than 2 percent of the transborder market and would have very little passenger potential. The 1989 existing daily volumes for Saint John, Moncton and Fredericton are 70, 48 and 21, respectively. Northern New Brunswick communities generated a little over 2 transborder passengers daily.

The above volumes have been identified as the maximum potential that can be diverted from existing services to a new or improved transborder service to Boston. There is also some potential to divert surface business trips that are presently being made between New Brunswick and the United States. The analysis indicated that the overall business auto market is approximately 28,445 one-way trips annually, or 80 one-way trips daily. Non-business surface trips, although representing a much higher volume, would have a very limited potential for diversion. It would appear that the greatest potential for increasing transborder air passenger volumes is with the business market.

Any transborder service to Boston, whether it is a new service or an improvement on the existing Saint John - Boston service, must offer on the route an aircraft such as the deHavilland DASH 8 as a minimum size and comfort level. Previous experience has shown smaller aircraft are not accepted by the travelling public for extended flights. The DASH 8 has a seating capacity of 37 and it is generally recognized that passenger load factors in the 19 to 20 range per flight is required for breakeven levels. This, of course, fluctuates depending on the fare structure and passenger mix on any particular flight.

Presently the Saint John - Boston route appears to be operating at least at the breakeven level offering 2 return flights daily. The analysis indicates that this route can be supported in terms of passenger levels. Thus any improvement to this service and/or better connections from other areas of New Brunswick would further enhance the viability of the service. New transborder routes that are established, whether by a regional carrier or a foreign carrier, could reduce passenger levels if it operated in direct competition (ie. Saint John to Boston).

Given that the Saint John - Boston city-pair currently has direct air service provided twice daily by Air Atlantic, the question arises as to what improvements can be made to provide better transborder service for those in New Brunswick, given the potential demand. It was previously identified that poor service presently exists for those in Fredericton and Moncton, travelling to Boston and to some U.S. points beyond, and that these city-pairs provide probably the best window of opportunity for improvement. However, the analysis revealed that Moncton and Fredericton can generate 33 and 14.5 passengers daily, respectively, for a direct Boston service, assuming the route is competitive from a cost and service point of view. This means 2 return flights daily or passenger levels from Moncton and Fredericton of 8.3 and 3.6 per flight, respectively. Thus on their own, neither Moncton or Fredericton can generate sufficient passengers from existing transborder levels to justify a direct service to Boston based on a breakeven passenger load requirement of 19 to 20 passengers per flight on a DASH 8.

There appears to be two alternatives to improving transborder air service between New Brunswick and New England. The first alternative is to improve the existing service by coordinating and rescheduling existing regional flights associated with Moncton, Fredericton and northern New Brunswick such that they provide an efficient connection to the existing Saint John - Boston transborder service. The second alternative is to establish a co-terminal service involving Moncton and Fredericton. Each alternative is more fully explored below.

6.2 Improvement of Existing Transborder Service

Air service from Fredericton to Saint John is currently provided by Air Atlantic, Air Nova, and Air Canada. It would be desirable if Air Atlantic could adjust its flight itineraries so that the Saint John - Boston service could be accessed by those

originating from, or destined to, Fredericton. For example, the morning outbound Air Atlantic service from Saint John to Boston departs at 9:05 a.m.. While there is no direct morning service provided from Fredericton to Saint John by Air Atlantic, a flight (CP#1458) does exist which flies direct to Halifax. If this flight were rescheduled to stop in Saint John, connections would then be possible for those requiring service to Boston. Rescheduling this flight would require an earlier departure time of the aircraft as it originates out of Halifax before reaching Fredericton. However, an earlier departure of this aircraft's itinerary should not be detrimental to the service it provides. Other similar adjustments to existing schedules can be accomplished to provide connections with Saint John - Boston flights throughout the day. Care would have to be used when adjusting schedules to ensure that existing air travel patterns are not adversely affected while attempting to divert, at maximum, 4 passengers per flight to the Saint John - Boston service from Fredericton.

At present, no air service exists between Moncton and Saint John. Therefore, in order to feed Saint John with transborder passenger volumes originating from Moncton, a new service would have to be established for this city-pair. The most probable scenario would see the diversion of an existing itinerary to include a stop in Moncton before continuing on to Saint John. For example, the current morning itinerary of Air Atlantic's aircraft serving the Saint John - Boston routing is Charlottetown (Sydney in the afternoon) - Halifax - Saint John - Boston. An intermediate stop between Halifax and Saint John at Moncton would provide the feeder service necessary for better transborder service from Moncton. Inbound morning service is Boston - Saint John - Halifax - Sydney (Charlottetown in the evening) which, again, would require an intermediate stop in Moncton between Saint John and Halifax. Expected passenger volumes originating from Moncton would be slightly less than the 8 per flight forecast for direct service, however, significant contributions of up to 7 passengers per flight can be realized. It is not expected that the provision of air service between Moncton and Saint John would generate any significant number of local trips given the relatively short driving distance between the two centres. The proposed service is depicted in Figure 6.1.

It was previously documented that Air Atlantic had, at one point, provided Moncton with connecting service to the Saint John - Boston route. Unfortunately the service was only provided once daily, at times contrary to normal travel patterns. The service was available for evening outbound, and morning inbound

Proposed Service Modifications
New Brunswick - New England

FIGURE 6.1

flights which would require at least a two-night stay in Boston to accomplish a single working day. Morning outbound and evening inbound service was available for those originating from Moncton, however, two stops were required before Boston was reached. While the service was dropped shortly after its inception due to low passenger volumes, provision of twice, rather than once, daily one-stop service from Moncton to Boston through Saint John could generate significant contributions to the transborder service with minimal impact on existing services.

The possibility of tying the northern New Brunswick airports, namely Bathurst, Chatham, and Charlo, into Air Atlantic's Saint John to Boston service was evaluated. However, it was found that present service providing air travel to the northern airports does not allow for convenient access to the transborder service. There is no direct air service between Saint John and any of the northern airports, therefore, one-stop service to Boston is not presently possible. Furthermore, good direct service form the northern areas to either Fredericton or Moncton does not exist, with the exception of Bathurst. In general, the routings for the northern airports are structured to provide feeds into Montreal. The northern New Brunswick market is approximately 2.5 passengers daily.

All outbound service from Charlo is direct to Montreal. All inbound service is routed from Montreal either directly or through Chatham. Transborder passengers are, therefore, afforded good service over a Montreal hub. Given the existing routings of air service to Charlo, it is not possible to realistically feed volumes into the Saint John - Boston service. Major routing changes would be necessary to provide better direct north-south service from Charlo before transborder passengers could be tied into the Saint John service.

Air service in Chatham is also predominantly routed through Montreal. Both daily outbound flights stop in Charlo enroute to Montreal. The afternoon inbound flight is direct from Montreal, while the late evening flight from Montreal stops in Fredericton before terminating in Chatham. This inbound flight from Fredericton is the only direct air link between Chatham and the southern area of New Brunswick, thereby precluding the possibility of tying into the Saint John transborder air service. Again, major changes in routings would be required before access could be gained to Saint John by Chatham.

Direct air service exists between both Moncton and Fredericton from Bathurst, once daily. Both services use Bathurst as an intermediate stop for access to Montreal. The outbound flight from Fredericton departs at 9:15 a.m., while the inbound arrives at 9:40 p.m. Neither flight would allow a connection for service to Saint John and on to Boston. The outbound flight from Fredericton would have to be delayed approximately 5 hours in order that connecting service to the first inbound flight from Boston could be accomplished. The inbound flight to Fredericton would need to be over 7 hours earlier to make connections to Saint John for direct service to Boston. However, minor adjustments to the mid-afternoon arrival and departure times of the Bathurst services at Moncton could result in efficient connections being made to a possible Halifax - Moncton - Saint John - Boston routing. The resultant routing to Boston would require two stops, one in Moncton, and one in Saint John before Boston would be reached. Competitive service from Bathurst to the United States is, however, provided with a single connection in Montreal, or with a stop in Moncton before connecting to a transborder flight in Halifax.

The rescheduling and rerouting of Air Atlantic's existing flight itineraries are best approached by the airline themselves given the complexities which are involved when adjusting schedules. Furthermore, the many ramifications of rescheduling an aircraft such as crew scheduling, maintenance, and expansion objectives are best dealt with by the airline. However, this study has shown that there is an excellent opportunity for the regional carrier to reschedule and coordinate its schedule to enhance the Saint John - Boston service by tying other regional services from Fredericton and Moncton into Saint John.

6.3 Prospective New Air Service

To estimate the economic benefits which are derived from the implementation of a new air service, another proposed scenario for improving transborder service was developed. Again, based on the finding that Boston is the preferred U.S. gateway, and in light of the poor service Fredericton and Moncton each have to Boston, the following service was evaluated. Outbound routing would originate in Moncton, stop in Fredericton to collect further enplaning passengers, and continue on to Boston. Inbound service would be the same itinerary in reverse. Two return flights per day would be provided. As noted in Section 3.7.1, expected passenger volumes for this service would be less than the sum of those expected, given direct

service to either city. It is, therefore, projected that per plane passenger volumes diverted and stimulated by such a routing would be, at maximum, 11 per flight. It is assumed that return service would be provided twice daily using a deHavilland DASH 8 aircraft. The service is depicted in Figure 6.2. It should be noted the 11 passengers per flight do not include any diversion from surface travel. As pointed out earlier there is some potential to increase passenger load if a cost competitive service can be provided.

A financial proforma was carried out for this proposed scenario. Using the latest DASH 8 cost information, the performance of the proposed service was estimated assuming full allocation of costs. It was determined that given a load factor of 11 passengers per flight and a competitive fare, the service could be expected to lose $1.415 million annually. The deficit results from total annual allocated costs of $3.377 million being offset by $1.962 million in total revenue. With the average growth rate for transborder air service from the Maritimes to the United States at approximately 5.0 percent, it would be another 14 years before volumes will reach breakeven levels necessary to sustain this service. However, there are economic benefits which are generated as a result of the implementation of a new air service.

Given the projected revenue shortfall for a proposed Moncton - Fredericton - Boston transborder service operating two return services daily, the potential for a once daily return service was assessed. Industry experts were consulted and it was found that a reduction in potential passenger volumes of at least 40 percent could be expected as a result of only offering return service once rather than twice daily. The underlying assumption is that the service still provides good connections (both inbound and outbound) and that little competition exists through other routings or with different carriers.

Potential schedulings were evaluated and it was found that should the proposed service arrive in Boston at 4:30 p.m. and subsequently depart at 5:15 p.m., good connections can be made for the other major U.S. destinations. In fact, most layover times, both inbound and outbound, are less than 85 minutes in length.

Based on capturing 60 percent of potential transborder passenger volumes with a once daily return service to Boston, 13 passengers per flight can be expected given a competitive fare structure. Again, a financial proforma was carried out for this proposed scenario for a DASH 8 aircraft. It was determined that the service could

Proposed Air Service
New Brunswick - New England
Fredericton
Moncton
Boston

FIGURE 6.2

be expected to lose $.752 million during its first year of operation. The deficit results from total annual allocated costs of $1.912 million being offset by $1.159 million in total revenue. By cutting services in half, total costs are reduced by 43 percent due to the burden of overhead allocation. Given average growth rates for transborder air service, it is projected that the service would not reach sufficient passenger loads to breakeven for approximately 12 years.

6.4 Economic Benefits of Prospective Service

It is not uncommon for the public sector to subsidize transport service, if determined to be in the public interest; for example, the Marine Atlantic ferries, the Maritime Freight Rate Assistance Act and the Atlantic Region Freight Assistance Act. An economic benefits analysis can provide information to appraise the merits of such a public investment on a recurring subsidy. The economic benefits derived from one prospective public project are compared with other prospective projects in allocating scarce public funding resources. However, in recent years of mounting public debt the trend has turned away from public operating subsidies on private ventures in favour of one-time public investment capital grants. These capital grants normally are awarded to a private concern to assist in mitigating the high "up-front" capital investment costs with the supporting documentation provided establishing the financial viability of the private project thereafter. The economic benefits analysis is used to determine whether the public capital assistance is warranted relative to other competing proposed projects.

There are established means to assess, from a public sector perspective, the direct and indirect net benefits of a proposed private operation, in this case the proposed Moncton - Fredericton - Boston DASH 8 return air service to be provided either twice or once daily.

It is assumed that the aircraft and the crew of three are available within the existing system, negating any capital costs for new aircraft, or opportunity costs of labour from fully employed air pilots and attendants. Similarly, all airports involved are assumed to have sufficient capacity for take-offs and landings, and airline ticket and dispatching services can be accommodated without expanding existing facilities or staff. In other words, it is assumed that only the actual net costs of providing the prospective air service need be addressed in this analysis. As mentioned previously, these net costs and revenues generated result in a net

annual loss to the private airline of $1.415 million for two return flights daily and $0.752 million for one return flight per day.

The economic benefits to New Brunswick of having a new air service connecting Moncton and Fredericton to Boston are the sum of direct and indirect revenues and employment income generated by the service. Direct benefits of the service would be from revenues received by the airline from passenger tickets and freight charges, by the airports from aircraft landing and general terminal fees and auto parking fees, as well as by various commercial operations including airport concessions, car rental agencies, travel agencies, accommodations and restaurant facilities. In addition, direct benefits are derived from the employment income received by the aircraft crew.

The indirect benefits to New Brunswick are those multiplier or "spin-off" benefits, which result from the direct expenditures and employment income created by the prospective service. For instance, the income earned by the aircraft crew would be in part spent on various goods and services, providing a marginal increase in business activity and so on.

Other benefits available to the Provincial and Federal Governments are the new revenues from the various taxes applied to the direct revenues and incomes. The taxes include the Air Transportation Tax (ATT), Goods and Services Tax (GST), Provincial Sales Tax (PST), Federal Income Tax (FIT) and Provincial Income Tax (PIT).

Economic benefits are gained only by newly generated (ie. net) economic activity. Therefore, passenger traffic simply diverted from alternate trip routes (eg. via Halifax, Montreal, or Toronto to Boston) are not a net economic activity.

The net economic activities generated by the prospective service providing two return services daily have been estimated and are provided in Table 6.1. Net passengers and cargo revenues have been based on a 25 percent market stimulation which is over and above traffic diverted from existing services. Passenger fares used are equivalent to those previously determined for a breakeven service. The average two-way fare for those originating in Moncton is $346.32, while Fredericton travellers are charged $311.97. Landing and general terminal fees have been calculated from the current rates charged at Moncton and Fredericton airports for

TABLE 6.1

ECONOMIC BENEFITS OF PROSPECTIVE TWO RETURN FLIGHTS PER DAY SERVICE ($ PER ANNUM)

Source	Net Direct Benefit	Net Indirect Benefit	Total Net Benefit
1. Airline Revenue	485,422	395,619	881,041
- Net Passengers	(466,752)		
- Net Cargo	(18,670)		
2. Airport Revenue	134,501	109,618	244,119
- Net Landing Fees	(53,315)		
- Net Terminal Fees	(71,448)		
- Net Parking Fees	(9,738)		
3. Other Business Revenue	266,740	170,180	436,920
4. Employment Income	301,142	231,578	532,720
- Net Aircraft Crew	(301,142)		
- Net Cargo Staff	(0)		
TOTAL	1,187,805	906,995	2,094,800
5. Other Benefits (net taxes)			207,280
- ATT	(43,278)		
- GST	(82,126)		
- PST	(29,341)		
- FIT	(32,835)		
- PIT	(19,700)		

DASH 8 aircraft. Parking fees were estimated assuming 50 percent of outbound passengers park for an average business trip duration of 6.1 days and 7.3 days for pleasure travellers. All other miscellaneous expenditures have been estimated based on the number of new market inbound passengers from the U.S. and an estimated average length of stay of 5.6 days per trip. An average expenditure per inbound traveller of $409.11 (before taxes) was extracted from the 1989 Air Exit Survey and utilized. Net employment income of the aircraft crew is based on the estimated block-hours of operation of the service requiring a pilot, co-pilot and attendant per flight. Latest industry estimates for DASH 8 crew costs are $127 per block hour.

The indirect benefits have been calculated from the Statistics Canada Input-Output Model Inverse Matrix multipliers according to the industry generating the revenue and income in New Brunswick. The total net benefits are simply the sum of direct and indirect benefits from all sources. It should be noted that other benefits, ie. the net tax revenues, have been noted. These net taxes should not be added to the direct and indirect benefits as they are actually included as a part of the direct and indirect revenues and income generated. They have been isolated for examination purposes only.

From Table 6.1, it can be seen that net direct benefits total $1.188 million, with net indirect benefits at $0.907. The total net benefits for a Moncton - Fredericton - Boston twice daily return service is $2.095 million annually. This compares with a net annual operating loss of $1.415 million.

The economic benefits generated by a prospective service providing return service to Boston once daily are presented in Table 6.2. It was estimated that a maximum of 60 percent of the total potential market could be retained with once daily return service, as opposed to two return flights per day. As shown in Table 6.2, the net economic benefit is projected to be $1.279 million annually, which compares with an annual operating loss of $.725 million.

There have been several potential induced industrial benefits postulated, which could result from this service. These included the fly-drive tourism business, aquaculture and fisheries fresh product delivery and same-day courier services. However, the shipper and other market interviews indicated limited possibilities.

TABLE 6.2

ECONOMIC BENEFITS OF A PROSPECTIVE ONE RETURN FLIGHT PER DAY SERVICE ($ PER ANNUM)

Source	Net Direct Benefit	Net Indirect Benefit	Total Net Benefit
1. Airline Revenue	315,525	257,153	572,678
- Net Passengers	(303,389)		
- Net Cargo	(12,136)		
2. Airport Revenue	73,904	60,232	134,136
- Net Landing Fees	(28,879)		
- Net Terminal Fees	(38,701)		
- Net Parking Fees	(6,324)		
3. Other Business Revenue	173,299	110,564	283,863
4. Employment Income	163,119	125,439	288,558
- Net Aircraft Crew	(163,119)		
- Net Cargo Staff	(0)		
TOTAL	725,847	553,388	1,279,235
5. Other Benefits (net taxes)			125,501
- ATT	(28,121)		
- GST	(49,860)		
- PST	(19,063)		
- FIT	(17,786)		
- PIT	(10,671)		

APPENDIX A

CHAMBER OF COMMERCE QUESTIONNAIRE

February 1, 1991 90-0527-36

RE: NEW BRUNSWICK - NEW ENGLAND AIR SERVICE STUDY

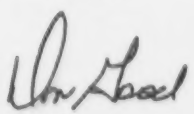
Dear Sir or Madam:

Flander-Good Associates Ltd. has been retained by the New Brunswick Department of Transportation, pursuant to the Cooperation Agreement on Planning, to undertake a study which analyzes current issues regarding air service between New Brunswick and the New England States. This study is a co-operative effort involving the Departments of Transportation; Tourism, Recreation and Heritage; Commerce and Technology; the Regional Development Corporation; and ACOA. One component of the project is a province-wide survey of all Chamber of Commerce members to determine characteristics of trips to and from the United States. The objective of this exercise is to make specific recommendations on what improvements could be implemented to existing air services.

With the Free Trade Agreement in place and New Brunswick's ability to compete, improved access to existing and new markets is essential for future economic growth.

Please take a few moments to complete the enclosed questionnaire and return it to the undersigned. I thank you in advance for your co-operation with this project. I am confident that our combined efforts will result in improved air service between New Brunswick and the New England area.

Yours truly,



DON GOOD, P.ENG.
VICE PRESIDENT

FIANDER-GOOD ASSOCIATES LTD.
P.O. BOX 207
FREDERICTON, NB
E3B 1B1

/rc

NEW BRUNSWICK - NEW ENGLAND AIR SERVICE STUDY
CHAMBER OF COMMERCE SURVEY

COMPANY NAME (Optional): _____

LOCATION: _____

1. How many **work related** trips to the United States have been made by persons associated with your firm during the past 12 months?

   _____ Trips

2. How many of these trips were completed by:

   air _____
   automobile _____
   bus _____
   train _____
   other _____

3. Please list the New Brunswick origin and United States destination for each of the **air** and **auto** trips indicated above? If possible, please indicate the month of travel and approximate trip duration in days.

	New Brunswick Origin	/	U.S. Destination	Month	Duration (days)	Mode (air/auto)
a.		/				
b.		/				
c.		/				
d.		/				
e.		/				
f.		/				
g.		/				
h.		/				
i.		/				

4a. During the past 12 months has anyone associated with your firm travelled by automobile to a U.S. airport to connect with an airline for travel?

Yes _____ No _____

b. If 'yes', which airport(s)? _____

_____

c. How many trips were made in this manner? _____

d. To which final destinations were these trips made?

_____

_____

_____

5a. If a new or improved air service were to be established between New Brunswick and a point in New England with connections to other airlines for travel to points beyond, would your firm use this service?

Yes, if it is a less expensive alternative _____
Yes, if it has better service, regardless of price _____
Yes, if it is less expensive and offers better service _____
No _____

b. How many times a year do you estimate your firm would use such a service?

_____

6a. During the past 12 months has anyone travelled **from** the U.S. to conduct business with your firm?

Yes _____ No _____

b. If yes, how many such trips were made? _____ trips

c. Please detail the U.S. origin, month of travel, trip duration, and mode of travel of business related trips made **from** the U.S. to your firm.

U.S. Origin	Month	Duration (days)	Mode (air/auto)

7. For the individual who is completing this questionnaire, if possible please detail any non-business related trips to the U.S. in the past 12 months that you have made.

	New Brunswick Origin / U.S. Destination	Month	Duration (days)	Mode (air/auto)
a.	_____ / _____	_____	_____	_____
b.	_____ / _____	_____	_____	_____
c.	_____ / _____	_____	_____	_____
d.	_____ / _____	_____	_____	_____

THANK YOU FOR YOUR PARTICIPATION!

APPENDIX B

AIR SERVICE SCHEDULES

LIST OF ABBREVIATIONS

AIRPORT CITY CODES

YFC	=	Fredericton
YSJ	=	Saint John
YQM	=	Moncton
YHZ	=	Halifax
ZBF	=	Bathurst
YYG	=	Charlottetown
YQI	=	Yarmouth
YQY	=	Sydney
YYZ	=	Toronto
YUL	=	Montreal
MIA	=	Miami
TPA	=	Tampa
LGA	=	Laguardia
BOS	=	Boston
ORD	=	Chicago
LAX	=	Los Angeles

AIRLINES

AC	=	Air Canada
CP	=	Canadian Airlines International (includes Air Atlantic)
QK	=	Air Nova

AIRCRAFT TYPE

146	=	British Aerospace 146
D9S	=	McDonnell Douglas DC9-30, 40, 50, and 80 series
727	=	Boeing 727
DH8	=	deHavilland Dash 8
M80	=	McDonnell Douglas DC9 Super 80
767	=	Boeing 767
D9	=	McDonnell Douglas DC9-10 and 20 series

ALL INCOING AND OUTGOING FLIGHT INFORMATION FOR FREDERICTON

ORIG	DEST	AIR-LINE 1	FLITE NO. 1	AIR-CRAFT TYPE 1	DT	AT	CONEC CITY	AIR-LINE 2	FLITE NO. 2	AIR-CRAFT TYPE 2	DT	AT	CONEC CITY	AIR-LINE 3	FLITE NO. 3	AIR-CRAFT TYPE 3	DT	AT	2-WAY FARES Bus. J	Reg. Econ Y	1st Dis. B	2nd Dis. M	Deep Dis. V	DAYS NOT FLOWN	Sothr STOPS (not con.)	$ CONNE	S/O TIME	TOTAL TRAVE TIME
YFC	MIA	QK	1881	146	750	805	YUL	AC	930	727	855	1230							1156	1052	612		578		0	1	50	340
YFC	MIA	AC	645	D9S	700	800	YYZ	AC	912	727	1015	1323							1156	1052	612		578		0	1	135	443
YFC	MIA	AC	640	D9S	1155	1408	YYZ	AC	918	727	1540	1848							1156	1052	612		578		YSJ	1	92	473
YFC	MIA	AC	668	D9S	1713	1813	YYZ	AC	914	727	1925	2233							1156	1052	612		578		0	1	77	340
MIA	YFC	AC	911	727	910	1208	YYZ	AC	668	D9S	1315	1651							1156	1052	612		578		YSJ	1	67	401
MIA	YFC	AC	933	727	1325	1638	YUL	QK	1888	146	1920	2125							1156	1052	612		578		0	1	162	420
MIA	YFC	AC	913	727	1425	1723	YYZ	AC	658	D9S	2020	2304							1156	1052	612		578		1,2,3 4,5	0	1	177	459
YFC	TPA	QK	1881	146	750	805	YUL	AC	920	D9S	900	1240							1054	960	557		527		0	1	55	350
YFC	TPA	AC	640	D9S	1155	1408	YYZ	AC	904	767	1725	2021							1054	960	557		527		YSJ	1	197	566
TPA	YFC	AC	901	727	1120	1401	YYZ	AC	420	D9S	1700	1816	YUL	QK	1888	146	1920	2125	1054	960	557		527		1,2,3 4,5	0	2	179	545
TPA	YFC	AC	925	D9S	1330	1627	YUL	QK	1888	146	1920	2125							1054	960	557		527		0	1	163	415
TPA	YFC	AC	903	D9S	1445	1725	YYZ	AC	658	D9S	2020	2304							1054	960	557		527		0	1	175	439
YFC	LGA	QK	1881	146	750	805	YUL	AC	744	D9S	1119	1235							842	766	489	383	304		0	1	194	345
YFC	LGA	QK	1887	146	1635	1650	YUL	AC	752	D9S	1930	2038							842	766	489	383	304		0	1	160	303

ALL INGOING AND OUTGOING FLIGHT INFORMATION FOR FREDERICTON

ORIG	DEST	AIR-LINE 1	FLITE NO. 1	AIRCRAFT TYPE 1	DT	AT	CONEC CITY	AIR-LINE 2	FLITE NO. 2	AIRCRAFT TYPE 2	DT	AT	CONEC CITY	AIR-LINE 3	FLITE NO. 3	AIRCRAFT TYPE 3	DT	AT	2-WAY FARES Buc. J	Reg. Econ Y	1st Dis. B	2nd Dis. M	Deep Dis. V	DAYS NOT FLOWN	STOPS (not con.)	# CONNE	S/O TIME	TOTAL TRAVE TIME
LGA	YFC	AC	705	727	920	1052	YYZ	AC	668	D9S	1315	1451							862	766	489	383	304		YSJ	1	143	391
LGA	YFC	AC	747	D9S	1320	1433	YUL	QK	1888	146	1920	2125							862	766	489	383	304		0	1	267	425
LGA	YFC	AC	713	D9S	1659	1830	YYZ	AC	658	D9S	2020	2304							862	766	489	383	304		0	1	110	305
YFC	BOS	QK	1814	DH8	815	945	YHZ	QK	1813	DH8	1050	1216							644	574	373	279	204	1,2,3 4,5	YSJ YQM	1	65	301
YFC	BOS	CP	1438	DH8	900	1025	YHZ	CP	1401	DH8	1110	1245												1,2,3 4,5	YQM YSJ	1	45	285
YFC	BOS	QK	1894	146	1100	1230	YHZ	AC	673	D9S	1455	1522													YSJ	1	145	322
YFC	BOS	CP	1410	DH8	1220	1345	YHZ	CP	1405	DH8	1425	1600													YQM YSJ	1	40	280
BOS	YFC	AC	670	D9S	1015	1231	YHZ	QK	1887	146	1440	1615													YQI YSJ	1	129	300
BOS	YFC	CP	1404	DH8	1400	1630	YHZ	CP	1411	DH8	1730	1755												1,2,3 4,5	0	1	60	235
BOS	YFC	QK	1855	DH8	1255	1615	YHZ	QK	1817	DH8	1715	1840													YQI YSJ	1	60	285
BOS	YFC	CP	1404	DH8	1015	1350	YHZ	CP	1411	DH8	1725	1850													YSJ YSJ	1	215	455
YFC	ORD	AC	645	D9S	700	800	YYZ	AC	721	D9S	900	940							1008	918	591	465	376		0	1	60	280
YFC	ORD	AC	645	D9S	840	923	YYZ	AC	723	D9S	1130	1203							1008	918	591	465	376	6	0	1	127	333
YFC	ORD	AC	640	D9S	1110	1309	YYZ	AC	725	D9S	1420	1456							1008	918	591	465	376	6	YSJ	1	71	466
YFC	ORD	CP	1429	DH8	1245	1325	YUL	AA	1043	MD0	1600	1730								918	591		413		0	1	155	405

ALL INCOING AND OUTGOING FLIGHT INFORMATION FOR FREDERICTON

ORIG	DEST	AIR-LINE 1	FLITE NO. 1	AIR-CRAFT TYPE 1	DT	AT	CONEC CITY	AIR-LINE 2	FLITE NO. 2	AIR-CRAFT TYPE 2	DT	AT	CONEC CITY	AIR-LINE 3	FLITE NO. 3	AIR-CRAFT TYPE 3	DT	AT	2-WAY FARES Bus. J	Reg. Econ Y	1st Dis. B	2nd Dis. H	Deep Dis. V	DAYS NOT FLOWN	#STOPS (not con.)	# CONNE	S/O TIME	TOTAL TRAVE TIME
ORD	YFC	AC	720	D9S	725	945	YYZ	AC	668	727	1315	1653							1008	918	591	465	374		YSJ	1	210	448
ORD	YFC	AC	722	D9S	1300	1525	YYZ	AC	658	D9S	2020	2304							1008	918	591	465	374		0	1	295	484
ORD	YFC	AA	580	M80	1014	1317	YUL	CP	1474	DH8	1600	1825								918	59.		413		0	1	163	371
YFC	LAX	AC	645	D9S	700	800	YYZ	AC	791	767	920	1134							2092	1900	1037	874	782		0	1	80	514
YFC	LAX	AC	668	D9S	1713	1813	YYZ	AC	793	767	1915	2132							2092	1900	1037	874	782		0	1	62	499
YFC	LAX	CP	1429	DH8	1245	1325	YUL	AA	1043	S80	1600	1730	ORD	AA	89	D10	1830	2057		1900	1036				0	2	215	732
LAX	YFC	AC	790	L10	750	1512	YYZ	AC	788	D9S	1605	1721	YUL	QK	1888	146	1920	2125	2092	1900	1037	874	782		0	2	172	575
LAX	YFC	AA	1456	D10	648	1239	ORD	AA	1186	S80	1330	1632	YUL	CP	1448	DH8	2030	2250		1900	1036			6	0	2	289	722

LL INCOMING AND OUTGOING FLIGHT INFORMATION FOR MONCTON

RIG	DEST	AIR-LINE 1	FLITE NO. 1	AIR-CRAFT TYPE 1	DT	AT	CONEC CITY	AIR-LINE 2	FLITE NO. 2	AIR-CRAFT TYPE 2	DT	AT	CONEC CITY	AIR-LINE 3	FLITE NO. 3	AIR-CRAF TYPE 3	DT	AT	2-WAY FARES Bus. J	Reg. Econ Y	1st Dis. B	2nd Dis. H	Deep Dis. V	DAYS NOT FLOWN	#other STOPS (not con.)	# CONNE	S/O TIME	TOTAL TRAVE TIME
YQM	MIA	QK	1883	146	705	735	YUL	AC	930	725	855	1230							1176	1068	668		588		0	1	80	385
YQM	MIA	AC	665	D9	1250	1404	YYZ	AC	918	725	1540	1848													0	1	96	418
YQM	MIA	AC	669	D9	1700	1814	YYZ	AC	914	725	1925	2233													0	1	71	393
MIA	YQM	AC	911	727	910	1208	YYZ	AC	662	D9	1320	1614													0	1	72	364
MIA	YQM	AC	913	727	1425	1723	YYZ	AC	664	D9	1856	2150													0	1	93	385
MIA	YQM	AC	933	727	1325	1638	YUL	QK	1886	146	1815	2035													0	1	97	370
MIA	YQM	AC	931	727	1210	1523	YUL	QK	1886	146	1815	2035													0	1	172	445
YQM	TPA	QK	1883	146	705	735	YUL	AC	920	D9	900	1240							1070	974	611		535		0	1	85	395
YQM	TPA	AC	665	D9	1250	1404	YYZ	AC	904	767	1725	2021													0	1	201	511
TPA	YQM	AC	925	D9	1330	1637	YUL	QK	1886	146	1815	2035													0	1	98	365
TPA	YQM	AC	903	D9	1445	1725	YYZ	AC	664	D9	1856	2150													0	1	91	365
YQM	LGA	QK	1883	146	705	735	YUL	AC	744	D9	1119	1235							784	712	462	352	261	6	0	1	224	380
YQM	LGA	QK	1895	146	1805	1835	YUL	AC	752	D9	1930	2038													0	1	55	213
YQM	LGA	QK	1837	DH8	1500	1700	YUL	AC	750	727	1750	1912													1SBF	1	50	312
YQM	LGA	QK	1883	146	705	735	YUL	AC	742	D9	919	1035												6,7	0	1	104	270

ALL INGOING AND OUTGOING FLIGHT INFORMATION FOR MONCTON

ORIG	DEST	AIR-LINE 1	FLITE NO. 1	AIR-CRAFT TYPE 1	DT	AT	CONEC CITY	AIR-LINE 2	FLITE NO. 2	AIR-CRAFT TYPE 2	DT	AT	CONEC CITY	AIR-LINE 3	FLITE NO. 3	AIR-CRAF TYPE 3	DT	AT	2-WAY FARES Bus. J	Reg. Econ Y	1st Dis. B	2nd Dis. H	Deep Dis. V	DAYS NOT FLOWN	Othr STOPS (not con.)	# CONNE	S/O TIME	TOTAL TRAVE TIME
YQM	LGA	CP	1438	DH8	950	1025	YHZ	CP	1489	146	1120	1200	YUL	AA	361	727	1400	1521	888	808	523				0	2	175	391
LGA	YQM	AC	743	D9	930	1048	YUL	QK	1834	DH8	1210	1550													ZBF	1	82	320
LGA	YQM	AC	747	D9	1320	1433	YUL	QK	1886	146	1815	2035													0	1	222	375
LGA	YQM	AA	1034	727	1125	1249	YYZ	CP	942	737	1445	1745	YHZ	CP	1425	DH8	1830	1905						1,2,3 4,5,6	0	2	161	400
YQM	BOS	QK	1834	DH8	1610	1846													594	524	367	314	237	6,7	YHZ YQI	0	0	216
YQM	BOS	QK	1842	DH8	830	950	YHZ	QK	1813	DH8	1050	1216													YYG YQI	1	60	286
YQM	BOS	QK	1884	146	1125	1200	YHZ	AC	673	D9	1455	1522													0	1	175	297
YQM	BOS	CP	1438	DH8	950	1025	YHZ	CP	1401	DH8	1110	1245												7	YSJ	1	45	235
YQM	BOS	QK	1850	DH8	700	732	YHZ	AC	671	D9	900	932												6,7	0	1	88	212
BOS	YQM	AC	670	D9	1015	1231	YHZ	QK	1837	DH8	1405	1440													0	1	94	210
BOS	YQM	QK	1855	DH8	1255	1615	YHZ	QK	1895	146	1710	1745													YQI	1	55	230
BOS	YQM	AC	672	D9	1610	1826	YHZ	QK	1819	DH8	1925	2000												6	0	1	59	170
BOS	YQM	CP	1404	DH8	1400	1740	YHZ	CP	1425	DH8	1830	1905												7	YSJ	1	50	245
BOS	YQM	CP	1404	DH8	1015	1350	YHZ	CP	1425	DH8	1630	1705												6	YSJ	1	160	350

LL INGOING AND OUTGOING FLIGHT INFORMATION FOR MONCTON

ORIG	DEST	AIR-LINE 1	FLITE NO. 1	AIR-CRAFT TYPE 1	DT	AT	CONEC CITY	AIR-LINE 2	FLITE NO. 2	AIR-CRAFT TYPE 2	DT	AT	CONEC CITY	AIR-LINE 3	FLITE NO. 3	AIR-CRAF TYPE 3	DT	AT	2-WAY FARES Bus. J	Reg. Econ Y	1st Dis. B	2nd Dis. H	Deep Dis. V	DAYS NOT FLOWN	#othr STOPS (not con.)	# CONNE	S/O TIME	TOTAL TRAVE TIME
YQM	ORD	AC	669	D9	1700	1814	YYZ	AC	729	D9	1920	2006							1050	956	613	478	374	6,7	0	1	66	306
YQM	ORD	AC	665	D9	1137	1244	YYZ	AC	725	D9	1420	1456												6	0	1	96	319
YQM	ORD	CP	1438	DH8	950	1025	YHZ	CP	943	737	1130	1255	YYZ	AA	393	M80	1645	1723		956	613		430		0	2	415	573
ORD	YQM	AC	720	D9	725	944	YYZ	AC	662	D9	1320	1614													0	1	216	409
ORD	YQM	AC	722	D9	1300	1525	YYZ	AC	664	D9	1856	2150													0	1	211	410
ORD	YQM	AA	580	727	1014	1254	YYZ	CP	942	737	1445	1745	YHZ	CP	1425	DH8	1830	1905							0	2	156	411
YQM	LAX	AC	669	D9	1700	1814	YYZ	AC	793	767	1915	2132							2138	1942	1057	884	782		0	1	61	512
YQM	LAX	CP	1429	DH8	1155	1325	YUL	AA	1043	S80	1600	1730	ORD	AA	89	D10	1830	2057		1948	1059				YFC	2	215	782
LAX	YQM	AC	790	L10	750	1512	YYZ	AC	664	D9	1856	2150													0	1	224	600
LAX	YQM	AA	1456	D10	648	1239	ORD	AA	1186	S80	1330	1632	YUL	CP	1486	146	1745	2015						6	YHZ*	3	169	647

ALL INGOING AND OUTGOING FLIGHT INFORMATION FOR SAINT JOHN

ORIG	DEST	AIR-LINE 1	FLITE NO. 1	AIR-CRAFT TYPE 1	DT	AT	CONEC CITY	AIR-LINE 2	FLITE NO. 2	AIR-CRAFT TYPE 2	DT	AT	CONEC CITY	AIR-LINE 3	FLITE NO. 3	AIR-CRAFT TYPE 3	DT	AT	2-WAY FARES Bus. J	Reg. Econ Y	1st Dis. B	2nd Dis. H	Deep Dis. V	DAYS NOT FLOWN	#stops (not con.)	# CONNE	S/O TIME	TOTAL TRAVE TIME
YSJ	MIA	AC	645	D9S	610	800	YYZ	AC	912	72S	1015	1323							1156	1052	612		578	1,2,3 4,5	YFC	1	135	493
YSJ	MIA	QK	1881	146	700	805	YUL	AC	930	72S	855	1230													YFC	1	50	390
YSJ	MIA	AC	640	D9S	1300	1408	YYZ	AC	918	72S	1540	1848													0	1	92	408
YSJ	MIA	AC	668	D9S	1625	1813	YYZ	AC	914	72S	1925	2233													YFC	1	72	428
MIA	YFC	AC	911	72S	910	1208	YYZ	AC	668	D9S	1315	1556													0	1	67	34[illegible]
MIA	YSJ	AC	933	72S	1325	1638	YUL	QK	1888	146	1920	2215													YFC	1	162	470
YSJ	TPA	AC	645	D9S	610	800	YYZ	AC	902	D9S	1045	1337							1054	960	557		527		YFC	1	165	507
YSJ	TPA	QK	1881	146	700	805	YUL	AC	920	D9S	900	1240													YFC	1	55	400
YSJ	TPA	AC	640	D9S	1300	1408	YYZ	AC	904	767	1725	2021												1,2,3 4,5	0	1	197	501
TPA	YSJ	AC	925	D9S	1330	1637	YUL	QK	1888	146	1920	2215													YFC	1	163	465
TPA	YSJ	AC	903	D9S	1445	1725	YYZ	AC	658	D9S	2020	2345													YFC	1	175	480
YSJ	LGA	QK	1881	146	700	805	YUL	AC	744	D9S	1119	1235							844	768	497	386	304		YFC	1	194	395
YSJ	LGA	QK	1887	146	1545	1650	YUL	AC	752	D9	1930	2038													YFC	1	160	353

ALL INGOING AND OUTGOING FLIGHT INFORMATION FOR SAINT JOHN

ORIG	DEST	AIR-LINE 1	FLITE NO. 1	AIR-CRAFT TYPE 1	DT	AT	CONEC CITY	AIR-LINE 2	FLITE NO. 2	AIR-CRAFT TYPE 2	DT	AT	CONEC CITY	AIR-LINE 3	FLITE NO. 3	AIR-CRAFT TYPE 3	DT	AT	2-WAY FARES Bus. J	Reg. Econ Y	1st Dis. B	2nd Dis. M	Deep Dis. V	DAYS NOT FLOWN	Other STOPS (not con.)	# CONNE	S/O TIME	TOTAL TRAVE TIME
LGA	YSJ	AC	743	D9	930	1048	YUL	AC	612	72S	1330	1552	YHZ	QK	1817	DH8	1715	1755							0	2	245	445
LGA	YSJ	AC	749	72S	1513	1626	YUL	QK	1888	146	1920	2215												6	YFC	1	174	363
YSJ	BOS	QK	1814	DH8	905	945	YHZ	QK	1813	DH8	1050	1216							482	412	296	237	195		YQI	1	65	251
YSJ	BOS	QK	1894	146	1150	1230	YHZ	AC	673	D9	1455	1522													0	1	145	272
YSJ	BOS	QK	1818	DH8	1520	1600	YHZ	QK	1834	DH8	1720	1846												1,2,3 4,5	YQI	1	80	266
YSJ	BOS	CP	1401	DH8	905	940														410	296	237	217	6	0	0	0	95
YSJ	BOS	CP	1405	DH8	1525	1600														410	296	237	217	6	0	0	0	95
BOS	YSJ	AC	670	D9	1015	1231	YHZ	QK	1887	146	1440	1520													0	1	129	245
BOS	YSJ	QK	1855	DH8	1255	1615	YHZ	QK	1817	DH8	1715	1755													YQI	1	60	240
BOS	YSJ	CP	1404	DH8	1015	1240																		6	0	0	0	90
BOS	YSJ	CP	1406	DH8	1640	1910																		6	0	0	0	90
YSJ	ORD	AC	645	D9	610	800	YYZ	AC	721	D9	900	940							1020	928	599	470	374		YFC	1	60	330
YSJ	ORD	AC	640	D9	1210	1309	YYZ	AC	725	D9	1420	1456												6	0	1	71	286
YSJ	ORD	AC	668	727	1625	1803	YYZ	AC	729	D9	1920	2006												6	YFC	1	77	341
YSJ	ORD	CP	1464	DH8	950	1030	YHZ	CP	943	737	1130	1255	YYZ	AA	393	M80	1645	1723		928	599		418	1,2,3 4,5	0	2	290	573
YSJ	ORD	CP	1404	DH8	1310	1350	YHZ	CP	931	737	1440	1605	YYZ	AA	457	757	2005	2048						1,2,3 4,5	0	2	290	578

ALL INBOUND AND OUTBOUND FLIGHT INFORMATION FOR SAINT JOHN

ORIG	DEST	AIR-LINE 1	FLITE NO. 1	AIR-CRAFT TYPE 1	DT	AT	CONEC CITY	AIR-LINE 2	FLITE NO. 2	AIR-CRAFT TYPE 2	DT	AT	CONEC CITY	AIR-LINE 3	FLITE NO. 3	AIR-CRAFT TYPE 3	DT	AT	2-WAY FARES Bus. J	Reg. Econ Y	1st Dis. B	2nd Dis. H	Deep Dis. V	DAYS NOT FLOWN	Both (not con.)	# CONNE	S/O TIME	TOTAL TRAVE TIME
ORD	YSJ	AC	720	D9	725	944	YYZ	AC	668	D9	1315	1556													0	1	211	391
ORD	YSJ	AC	722	D9	1300	1525	YYZ	AC	658	D9	2020	2346													YFC	1	295	526
ORD	YSJ	AA	696	S80	725	1027	YUL	CP	1494	146	1310	1540	YHZ	CP	1411	DH8	1630	1710							0	2	283	465
YSJ	LAX	AC	645	D9	610	800	YYZ	AC	791	767	920	1134							2116	1924	1051	883	782		YFC	1	80	624
YSJ	LAX	AC	668	D9	1625	1813	YYZ	AC	793	767	1915	2132													YFC	1	62	547
LAX	YSJ	AC	790	L10	750	1512	YYZ	AC	420	D9	1700	1816	YUL	QK	1888	146	1920	2215							YFC	2	108	625

APPENDIX C

AIR FARE DIFFERENTIALS

FREDERICTON FARE ANALYSIS:

	FARE CLASS				
	BUS.(J)	ECON-Y	1ST -B	2ND -H	DEEP-V
FTON-MIA					
BASE:	1,156.00	1,052.00	612.00		578.00
ATT:	40.00	40.00	40.00		40.00
GST:	83.72	76.44	45.64		43.26
U.S. TAX:	6.97	6.97	6.97		6.97
US IMMIG:	5.79	5.79	5.79		5.79
TOTAL:	1,292.48	1,181.20	710.40		674.02
PQI-MIA					
BASE(us):		926.00	499.00	435.00	410.00
CDN:		1,076.74	580.23	505.81	476.74
DIFFERENCE:		104.46	130.17		197.28
BGR-MIA					
BASE(us):	1,696.00	910.00	387.00	377.00	328.00
CDN:	1,972.09	1,058.14	450.00	438.37	381.40
DIFFERENCE:	(679.61)	123.06	260.40		292.62
PWM-MIA					
BASE(us):	1,612.00	892.00	370.00	367.00	318.00
CDN:	1,874.42	1,037.21	430.23	426.74	369.77
DIFFERENCE:	(581.94)	143.99	280.17		304.25
BOS-MIA					
BASE(us):	900.00	750.00	365.00	347.00	276.00
CDN:	1,046.51	872.09	424.42	403.49	320.93
DIFFERENCE:	245.97	309.11	285.98		353.09
FTON-TPA					
BASE:	1054	960	557		527
ATT:	40	40	40		40
GST:	76.58	70	41.79		39.69
U.S. TAX:	6.97	6.97	6.97		6.97
US IMMIG:	5.79	5.79	5.79		5.79
TOTAL:	1183.34	1082.76	651.55		619.45
PQI-TPA					
BASE(us):		926	497	426	402
CDN:		1076.74	577.91	495.35	467.44
DIFFERENCE:		6.02	73.64		152.01
BGR-TPA					
BASE(us):	1,626.00	902.00	476.00	387.00	328.00
CDN:	1,890.70	1,048.84	553.49	450.00	381.40
DIFFERENCE:	(707.36)	33.92	98.06		238.05
PWM-TPA					
BASE(us):	1,612.00	878.00	463.00	376.00	318.00
CDN:	1,874.42	1,020.93	538.37	437.21	369.77
DIFFERENCE:	(691.08)	61.83	113.18		249.68
BOS-TPA					
BASE(us):	900.00	750.00	448.00	228.00	193.00
CDN:	1,046.51	872.09	520.93	265.12	224.42
DIFFERENCE:	136.83	210.67	130.62		395.03

FREDERICTON FARE ANALYSIS:

	FARE CLASS				
	BUS.(J)	ECON-Y	1ST -B	2ND -H	DEEP-V
FTON-LGA					
BASE:	842	766	489	383	304
ATT:	40	40	40	36.81	31.28
GST:	61.74	56.42	37.03	29.39	23.47
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US IMMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	956.5	875.18	578.79	461.96	371.51
PQI-LGA					
BASE(us):		566	398	343	255
CDN:		658.14	462.79	398.84	296.51
DIFFERENCE:		217.04	116.00	63.12	75.00
BGR-LGA					
BASE(us):		568.00	355.00	309.00	283.00
CDN:		660.47	412.79	359.30	329.07
DIFFERENCE:		214.71	166.00	102.65	42.44
PWM-LGA					
BASE(us):	768.00	520.00	270.00	224.00	204.00
CDN:	893.02	604.65	313.95	260.47	237.21
DIFFERENCE:	63.48	270.53	264.84	201.49	134.30
BOS-LGA					
BASE(us):		314.00	258.00	210.00	174.00
CDN:		365.12	300.00	244.19	202.33
DIFFERENCE:		510.06	278.79	217.77	169.18
FTON-BOS					
BASE:	644	574	373	279	204
ATT:	40	40	36.11	29.53	24.28
GST:	47.88	42.98	28.64	21.60	15.98
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US IMMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	744.64	669.74	450.51	342.89	257.02
PQI-BOS					
BASE(us):		450	426	303	265
CDN:		523.26	495.35	352.33	308.14
DIFFERENCE:		146.48	(44.84)	(9.44)	(51.12)
BGR-BOS					
BASE(us):	688.00	404.00	356.00	270.00	178.00
CDN:	800.00	469.77	413.95	313.95	206.98
DIFFERENCE:	(55.36)	199.97	36.55	28.93	50.04
PWM-BOS					
BASE(us):	574.00	272.00	174.00	139.00	100.00
CDN:	667.44	316.28	202.33	161.63	116.28
DIFFERENCE:	77.20	353.46	248.18	181.26	140.74

FREDERICTON FARE ANALYSIS:

	FARE CLASS				
	BUS.(J)	ECON-Y	1ST -B	2ND -H	DEEP-V
FTON-ORD					
BASE:	1008	918	591	465	374
ATT:	40	40	40	40.00	36.18
GST:	73.36	67.06	44.17	35.35	28.71
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US IMMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	1134.12	1037.82	687.93	553.11	451.65
PQI-ORD					
BASE(us):		970.00	477.00	402.00	353.00
CDN:		1,127.91	554.65	467.44	410.47
DIFFERENCE:		(90.09)	133.28	85.67	41.19
BGR-ORD					
BASE(us):	1,386.00	926.00	430.00	405.00	355.00
CDN:	1,611.63	1,076.74	500.00	470.93	412.79
DIFFERENCE:	(477.51)	(38.92)	187.93	82.18	38.86
PWM-ORD					
BASE(us):	1,332.00	730.00	405.00	351.00	331.00
CDN:	1,548.84	848.84	470.93	408.14	384.88
DIFFERENCE:	(414.72)	188.98	217.00	144.97	66.77
BOS-ORD					
BASE(us):	926.00	826.00	331.00	303.00	178.00
CDN:	1,076.74	960.47	384.88	352.33	206.98
DIFFERENCE:	57.38	77.35	303.05	200.78	244.68
FTON-LAX					
BASE:	2092	1900	1037	874	782
ATT:	40	40	40	40.00	40.00
GST:	149.24	135.8	75.39	63.98	57.54
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US IMMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	2294	2088.56	1165.15	990.74	892.30
PQI-LAX					
BASE(us):		1646	698	599	551
CDN:		1913.95	811.63	696.51	640.70
DIFFERENCE:		174.61	353.52	294.23	251.60
BGR-LAX					
BASE(us):	2,232.00	1,492.00	651.00	554.00	504.00
CDN:	2,595.35	1,734.88	756.98	644.19	586.05
DIFFERENCE:	(301.35)	353.68	408.17	346.55	306.25
PWM-LAX					
BASE(us):	1,542.00	1,114.00	651.00	554.00	504.00
CDN:	1,793.02	1,295.35	756.98	644.19	586.05
DIFFERENCE:	500.98	793.21	408.17	346.55	306.25
BOS-LAX					
BASE(us):	1,462.00	1,076.00	529.00	478.00	385.00
CDN:	1,700.00	1,251.16	615.12	555.81	447.67
DIFFERENCE:	594.00	837.40	550.03	434.93	444.63

MONCTON FARE ANALYSIS:

	FARE CLASS				
	BUS.(J)	ECON-Y	1ST -B	2ND -H	DEEP-V
MONCTON-MIA					
BASE:	1,176.00	1,068.00	668.00		588.00
ATT:	40.00	40.00	40.00		40.00
GST:	85.12	77.56	49.56		43.96
U.S. TAX:	6.97	6.97	6.97		6.97
US IMMIG:	5.79	5.79	5.79		5.79
TOTAL:	1,313.88	1,198.32	770.32		684.72
PQI-MIA					
BASE(us):		926.00	499.00	435.00	410.00
CDN:		1,076.74	580.23	505.81	476.74
DIFFERENCE:		121.58	190.09		207.98
BGR-MIA					
BASE(us):	1,696.00	910.00	387.00	377.00	328.00
CDN:	1,972.09	1,058.14	450.00	438.37	381.40
DIFFERENCE:	(658.21)	140.18	320.32		303.32
PWM-MIA					
BASE(us):	1,612.00	892.00	370.00	367.00	318.00
CDN:	1,874.42	1,037.21	430.23	426.74	369.77
DIFFERENCE:	(560.54)	161.11	340.09		314.95
BOS-MIA					
BASE(us):	900.00	750.00	365.00	347.00	276.00
CDN:	1,046.51	872.09	424.42	403.49	320.93
DIFFERENCE:	267.37	326.23	345.90		363.79
MONCTON-TPA					
BASE:	1070	974	611		535
ATT:	40	40	40		40
GST:	77.7	70.98	45.57		40.25
U.S. TAX:	6.97	6.97	6.97		6.97
US IMMIG:	5.79	5.79	5.79		5.79
TOTAL:	1200.46	1097.74	709.33		628.01
PQI-TPA					
BASE(us):		926	497	426	402
CDN:		1076.74	577.91	495.35	467.44
DIFFERENCE:		21.00	131.42		160.57
BGR-TPA					
BASE(us):	1,626.00	902.00	476.00	387.00	328.00
CDN:	1,890.70	1,048.84	553.49	450.00	381.40
DIFFERENCE:	(690.24)	48.90	155.84		246.61
PWM-TPA					
BASE(us):	1,612.00	878.00	463.00	376.00	318.00
CDN:	1,874.42	1,020.93	538.37	437.21	369.77
DIFFERENCE:	(673.96)	76.81	170.96		258.24
BOS-TPA					
BASE(us):	900.00	750.00	448.00	228.00	193.00
CDN:	1,046.51	872.09	520.93	265.12	224.42
DIFFERENCE:	153.95	225.65	188.40		403.59

MONCTON FARE ANALYSIS:

	FARE CLASS				
	BUS.(J)	ECON-Y	1ST -B	2ND -H	DEEP-V
MONCTON-LGA					
BASE:	784	712	462	352	261
ATT:	40	40	40	34.64	28.27
GST:	57.68	52.64	35.14	27.06	20.25
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US INMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	894.44	817.4	549.9	426.46	322.28
PQI-LGA					
BASE(us):		566	398	343	255
CDN:		658.14	462.79	398.84	296.51
DIFFERENCE:		159.26	87.11	27.63	25.77
BGR-LGA					
BASE(us):		568.00	355.00	309.00	283.00
CDN:		660.47	412.79	359.30	329.07
DIFFERENCE:		156.93	137.11	67.16	(6.79)
PWM-LGA					
BASE(us):	768.00	520.00	270.00	224.00	204.00
CDN:	893.02	604.65	313.95	260.47	237.21
DIFFERENCE:	1.42	212.75	235.95	166.00	85.07
BOS-LGA					
BASE(us):		314.00	258.00	210.00	174.00
CDN:		365.12	300.00	244.19	202.33
DIFFERENCE:		452.28	249.90	182.28	119.95
MONCTON-BOS					
BASE:	594	524	367	314	237
ATT:	40	40	35.69	31.98	26.59
GST:	44.38	39.48	28.19	24.22	18.45
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US INMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	691.14	616.24	443.64	382.96	294.80
PQI-BOS					
BASE(us):		450	426	303	265
CDN:		523.26	495.35	352.33	308.14
DIFFERENCE:		92.98	(51.71)	30.63	(13.34)
BGR-BOS					
BASE(us):	688.00	404.00	356.00	270.00	178.00
CDN:	800.00	469.77	413.95	313.95	206.98
DIFFERENCE:	(108.86)	146.47	29.68	69.01	87.82
PWM-BOS					
BASE(us):	574.00	272.00	174.00	139.00	100.00
CDN:	667.44	316.28	202.33	161.63	116.28
DIFFERENCE:	23.70	299.96	241.31	221.33	178.52

MONCTON FARE ANALYSIS:

	FARE CLASS				
	BUS.(J)	ECON-Y	1ST -B	2ND -H	DEEP-V
MONCTON-ORD					
BASE:	1050	956	613	478	374
ATT:	40	40	40	40.00	36.18
GST:	76.3	69.72	45.71	36.26	28.71
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US IMMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	1179.06	1078.48	711.47	567.02	451.65
PQI-ORD					
BASE(us):		970.00	477.00	402.00	353.00
CDN:		1,127.91	554.65	467.44	410.47
DIFFERENCE:		(49.43)	156.82	99.58	41.19
BGR-ORD					
BASE(us):	1,386.00	926.00	430.00	405.00	355.00
CDN:	1,611.63	1,076.74	500.00	470.93	412.79
DIFFERENCE:	(432.57)	1.74	211.47	96.09	38.86
PWM-ORD					
BASE(us):	1,332.00	730.00	405.00	351.00	331.00
CDN:	1,548.84	848.84	470.93	408.14	384.88
DIFFERENCE:	(369.78)	229.64	240.54	158.88	66.77
BOS-ORD					
BASE(us):	926.00	826.00	331.00	303.00	178.00
CDN:	1,076.74	960.47	384.88	352.33	206.98
DIFFERENCE:	102.32	118.01	326.59	214.69	244.68
MONCTON-LAX					
BASE:	2138	1942	1057	884	782
ATT:	40	40	40	40.00	40.00
GST:	152.46	138.74	76.79	64.68	57.54
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US IMMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	2343.22	2133.5	1186.55	1001.44	892.30
PQI-LAX					
BASE(us):		1646	698	599	551
CDN:		1913.95	811.63	696.51	640.70
DIFFERENCE:		219.55	374.92	304.93	251.60
BGR-LAX					
BASE(us):	2,232.00	1,492.00	651.00	554.00	504.00
CDN:	2,595.35	1,734.88	756.98	644.19	586.05
DIFFERENCE:	(252.13)	398.62	429.57	357.25	306.25
PWM-LAX					
BASE(us):	1,542.00	1,114.00	651.00	554.00	504.00
CDN:	1,793.02	1,295.35	756.98	644.19	586.05
DIFFERENCE:	550.20	838.15	429.57	357.25	306.25
BOS-LAX					
BASE(us):	1,462.00	1,076.00	529.00	478.00	385.00
CDN:	1,700.00	1,251.16	615.12	555.81	447.67
DIFFERENCE:	643.22	882.34	571.43	445.63	444.63

SAINT JOHN FARE ANALYSIS:

	FARE CLASS				
	BUS.(J)	ECON-Y	1ST -B	2ND -H	DEEP-V
SAINT JOHN-MIA					
BASE:	1,156.00	1,052.00	612.00		578.00
ATT:	40.00	40.00	40.00		40.00
GST:	83.72	76.44	45.64		43.26
U.S. TAX:	6.97	6.97	6.97		6.97
US IMMIG:	5.79	5.79	5.79		5.79
TOTAL:	1,292.48	1,181.20	710.40		674.02
PQI-MIA					
BASE(us):		926.00	499.00	435.00	410.00
CDN:		1,076.74	580.23	505.81	476.74
DIFFERENCE:		104.46	130.17		197.28
BGR-MIA					
BASE(us):	1,696.00	910.00	387.00	377.00	328.00
CDN:	1,972.09	1,058.14	450.00	438.37	381.40
DIFFERENCE:	(679.61)	123.06	260.40		292.62
PWM-MIA					
BASE(us):	1,612.00	892.00	370.00	367.00	318.00
CDN:	1,874.42	1,037.21	430.23	426.74	369.77
DIFFERENCE:	(581.94)	143.99	280.17		304.25
BOS-MIA					
BASE(us):	900.00	750.00	365.00	347.00	276.00
CDN:	1,046.51	872.09	424.42	403.49	320.93
DIFFERENCE:	245.97	309.11	285.98		353.09
SAINT JOHN-TPA					
BASE:	1054	960	557		527
ATT:	40	40	40		40
GST:	76.58	70	41.79		39.69
U.S. TAX:	6.97	6.97	6.97		6.97
US IMMIG:	5.79	5.79	5.79		5.79
TOTAL:	1183.34	1082.76	651.55		619.45
PQI-TPA					
BASE(us):		926	497	426	402
CDN:		1076.74	577.91	495.35	467.44
DIFFERENCE:		6.02	73.64		152.01
BGR-TPA					
BASE(us):	1,626.00	902.00	476.00	387.00	328.00
CDN:	1,890.70	1,048.84	553.49	450.00	381.40
DIFFERENCE:	(707.36)	33.92	98.06		238.05
PWM-TPA					
BASE(us):	1,612.00	878.00	463.00	376.00	318.00
CDN:	1,874.42	1,020.93	538.37	437.21	369.77
DIFFERENCE:	(691.08)	61.83	113.18		249.68
BOS-TPA					
BASE(us):	900.00	750.00	448.00	228.00	193.00
CDN:	1,046.51	872.09	520.93	265.12	224.42
DIFFERENCE:	136.83	210.67	130.62		395.03

SAINT JOHN FARE ANALYSIS:

	FARE CLASS				
	BUS.(J)	ECON-Y	1ST -B	2ND -H	DEEP-V
SAINT JOHN-LGA					
BASE:	844	768	497	386	304
ATT:	40	40	40	37.02	31.28
GST:	61.88	56.56	37.59	29.61	23.47
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US IMMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	958.64	877.32	587.35	465.39	371.51
FQI-LGA					
BASE(us):		566	398	343	255
CDN:		658.14	462.79	398.84	296.51
DIFFERENCE:		219.18	124.56	66.55	75.00
BGR-LGA					
BASE(us):		568.00	355.00	309.00	283.00
CDN:		660.47	412.79	359.30	329.07
DIFFERENCE:		216.85	174.56	106.09	42.44
PWM-LGA					
BASE(us):	768.00	520.00	270.00	224.00	204.00
CDN:	893.02	604.65	313.95	260.47	237.21
DIFFERENCE:	65.62	272.67	273.40	204.93	134.30
BOS-LGA					
BASE(us):		314.00	258.00	210.00	174.00
CDN:		365.12	300.00	244.19	202.33
DIFFERENCE:		512.20	287.35	221.21	169.18
SAINT JOHN-BOS					
BASE:	482	412	296	237	217
ATT:	40	38.84	30.72	26.59	25.19
GST:	36.54	31.5588	22.87	18.45	16.95
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US IMMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	571.3	495.1588	362.35	294.80	271.90
PQI-BOS					
BASE(us):		450	426	303	265
CDN:		523.26	495.35	352.33	308.14
DIFFERENCE:		(28.10)	(133.00)	(57.52)	(36.24)
BGR-BOS					
BASE(us):	688.00	404.00	356.00	270.00	178.00
CDN:	800.00	469.77	413.95	313.95	206.98
DIFFERENCE:	(228.70)	25.39	(51.60)	(19.15)	64.93
PWM-BOS					
BASE(us):	574.00	272.00	174.00	139.00	100.00
CDN:	667.44	316.28	202.33	161.63	116.28
DIFFERENCE:	(96.14)	178.88	160.02	133.17	155.62

SAINT JOHN FARE ANALYSIS:

	FARE CLASS				
	BUS.(J)	ECON-Y	1ST -B	2ND -H	DEEP-V
SAINT JOHN-ORD					
BASE:	1020	928	599	470	374
ATT:	40	40	40	40.00	36.18
GST:	74.2	67.76	44.73	35.70	28.71
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US IMMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	1146.96	1048.52	696.49	558.46	451.65
PQI-ORD					
BASE(us):		970.00	477.00	402.00	353.00
CDN:		1,127.91	554.65	467.44	410.47
DIFFERENCE:		(79.39)	141.84	91.02	41.19
BGR-ORD					
BASE(us):	1,386.00	926.00	430.00	405.00	355.00
CDN:	1,611.63	1,076.74	500.00	470.93	412.79
DIFFERENCE:	(464.67)	(28.22)	196.49	87.53	38.86
PWM-ORD					
BASE(us):	1,332.00	730.00	405.00	351.00	331.00
CDN:	1,548.84	848.84	470.93	408.14	384.88
DIFFERENCE:	(401.88)	199.68	225.56	150.32	66.77
BOS-ORD					
BASE(us):	926.00	826.00	331.00	303.00	178.00
CDN:	1,076.74	960.47	384.88	352.33	206.98
DIFFERENCE:	70.22	88.05	311.61	206.13	244.68
SAINT JOHN-LAX					
BASE:	2116	1924	1051	883	782
ATT:	40	40	40	40.00	40.00
GST:	150.92	137.48	76.37	64.61	57.54
U.S. TAX:	6.97	6.97	6.97	6.97	6.97
US IMMIG:	5.79	5.79	5.79	5.79	5.79
TOTAL:	2319.68	2114.24	1180.13	1000.37	892.30
PQI-LAX					
BASE(us):		1646	698	599	551
CDN:		1913.95	811.63	696.51	640.70
DIFFERENCE:		200.29	368.50	303.86	251.60
BGR-LAX					
BASE(us):	2,232.00	1,492.00	651.00	554.00	504.00
CDN:	2,595.35	1,734.88	756.98	644.19	586.05
DIFFERENCE:	(275.67)	379.36	423.15	356.18	306.25
PWM-LAX					
BASE(us):	1,542.00	1,114.00	651.00	554.00	504.00
CDN:	1,793.02	1,295.35	756.98	644.19	586.05
DIFFERENCE:	526.66	818.89	423.15	356.18	306.25
BOS-LAX					
BASE(us):	1,462.00	1,076.00	529.00	478.00	385.00
CDN:	1,700.00	1,251.16	615.12	555.81	447.67
DIFFERENCE:	619.68	863.08	565.01	444.56	444.63

EXECUTIVE SUMMARY

NEW BRUNSWICK-NEW ENGLAND AIR SERVICE STUDY

Submitted To:

New Brunswick Department of Transportation
New Brunswick Department of Tourism, Recreation & Heritage
New Brunswick Department of Commerce and Technology
Regional Development Corporation
Atlantic Canada Opportunities Agency

Submitted By:

Fiander-Good Associates Ltd.

May, 1991

Suite 200, 335 Queen Street,
P.O. Box 207, Fredericton,
New Brunswick E3B 1B1
Phone: (506) 458-8455
Fax: (506) 452-2729

FGA FIANDER - GOOD ASSOCIATES LTD

1.0 INTRODUCTION

With the exception of Saint John, air service to the United States from New Brunswick communities can presently only be obtained through Toronto, Montreal or Halifax gateways. Throughout most of the 1980's Saint John enjoyed direct jet air service to Boston provided by Air Canada. In 1987 Air Atlantic took over the route, providing direct scheduled air service between Saint John and Boston, utilizing a deHavilland DASH 8 aircraft. Present schedulings enable same day return service to Saint John traffic, however, timings are such that Boston traffic is not afforded same day return service. Although a couple of other short-lived transborder services have been implemented, the Saint John - Boston link has historically been the sole direct air service between New Brunswick and the United States.

Because of the relatively short distances between some New Brunswick communities and the airports at Presque Isle and Bangor, and the available air service from these airports to other New England areas, as well as the rest of the United States, trips are made annually by road between New Brunswick and the above airports for the purpose of utilizing air service to Boston and destinations beyond. It has been established from previous discussions with travel agents that most trips are made to these airports for "sun destination" excursions during our winter months. There are also some business trips being made in a similar fashion, as a means of reaching both U.S. and Canadian destinations. Efforts are made in this study to more clearly quantify these numbers and to identify the feasibility of improving transborder air service.

Any increase and/or improvement in direct transborder air service can increase economic opportunities for New Brunswick. As a result, the New Brunswick Department of Transportation, in association with the Department of Tourism, Recreation and Heritage, the Department of Commerce and Technology, the Regional Development Corporation, and ACOA commissioned Fiander-Good Associates Ltd. to complete a New Brunswick - New England Air Study. This project has been funded by the Governments of New Brunswick and Canada pursuant to the Cooperation Agreement on Planning.

2.0 STUDY PURPOSE AND SCOPE

As stated in the Terms of Reference the purpose of the study was as follows:

> **"The study will analyze current issues regarding air service between New Brunswick and the New England States and will make specific recommendations on how improvements could be implemented.**

Four major areas, in which efforts were directed include: 1). the potential for improving scheduled air service; 2). the level of usage of air services at Maine airports by New Brunswickers; 3). the potential for fly-drive tourist traffic entering New Brunswick; and 4). the direct and "spin-off" economic benefits which would be generated from an improved transborder air service.

Data collection activities have been directed towards obtaining as many secondary data sources as possible, thus minimizing expenditures on primary data collection. A survey of the business community was completed through the cooperation of the Atlantic Chamber of Commerce and New Brunswick Department of Commerce and Technology. Primary data were also collected through interviews with several travel agents throughout New Brunswick and Maine, as well as discussions with various airline officials, government officials and industry representatives.

The geographic study area included all of New Brunswick, that part of Nova Scotia served by the Moncton airport, the area of Quebec served or potentially served by Charlo, Edmundston and St. Leonard, the New England states, and New York City.

3.0 SUMMARY OF FINDINGS

Based on the evaluation completed as part of this project the following major findings have been extracted from the main body of the report:

1. **The only existing direct transborder air service in New Brunswick is offered between Saint John and Boston by Air Atlantic. Return service is offered twice daily, six days per week, with a single return flight on Saturdays.**

2. Recently, Precision Air which is a U.S. regional carrier affiliated with Northeast Airlines, has applied for a license to provide two new services from Boston to New Brunswick. The proposed routes are: 1). Boston - Moncton - Charlottetown, and 2). Boston - Saint John - Fredericton and are to be served with a 19 passenger Metroliner, 2 return flights daily, 6 days per week.

3. The existing New Brunswick transborder market is 51,327 passengers annually (based on 1989 data). Approximately 70 percent of this market is currently utilizing Montreal, Toronto and to some extent Halifax as gateways to the U.S. Saint John Airport generates 49.5 percent of the total transborder market, while Fredericton and Moncton generate 14.8 percent and 34.0 percent, respectively. Northern New Brunswick airports account for the remaining 1.7 percent.

4. Boston is the most popular destination for New Brunswick transborder air travellers, accounting for 42 percent of the total movements. The Florida market represents 29 percent. New York is the third most popular destination representing 9 percent of the transborder volumes.

5. New Brunswick airports (excluding Saint John) do not generate sufficient demand by themselves to support a DASH 8 service based solely on existing transborder volumes. It will be necessary to either divert existing surface trips to the air mode, stimulate new trips using a new or improved transborder air service and/or conduct some type of co-terminal operation. Any new transborder route would have to compete on both a service and cost basis with existing flights primarily over Montreal and Toronto. There is an opportunity to improve the existing transborder service out of Saint John and thus capture some of the existing market over Montreal and Toronto by providing better connections to Saint John from Moncton and Fredericton.

6. The first quarter of the year represents the period when transborder air demand is at its highest, followed by the second quarter. The third quarter is the least busiest.

7. The 1986 Air Atlantic Study indicated that thirty-five percent of air trips to the United States were business related, 52 percent were vacation related, while the remaining 13 percent were categorized as some "other" purpose.

8. It is estimated that there are approximately 673,310 one-way auto person-trips that are greater than one-day in duration made between the United States and New Brunswick annually. Although this can be considered the overall potential market for diverting trips to a transborder air service, the potential diversion of the business component of these trips would be more realistic.

9. In total, 28,445 one-way auto person-trips are made between the United States and New Brunswick annually for the stated purpose of business. However, this figure does not include business trips between New Brunswick and the State of Maine given that the potential to divert these trips is unlikely. Thus, this is an area where efforts can be directed at diverting surface trips to a new or improved transborder air service.

10. The Chamber of Commerce survey, which was supplemented by a mail-out survey conducted by New Brunswick Department of Commerce and Technology, resulted in those responding indicating they made 937 transborder work related trips to the United States over the last year. Sixty-two percent were by air, while the remainder were by automobile. Seventy-two percent of the business trips inbound from the U.S. (303) were by air. Outbound business trips had an average duration of 4.0 days, while inbound business trips (from the U.S.) had a duration of 2.6 days.

11. The State of Maine was the most popular work trip destination of the survey respondents at 30 percent, followed by New York and Florida at 7 and 5 percent, respectively. Boston is the single most popular destination for inbound work trips at 16 percent, followed by the State of Maine at 28 percent with the New York/New Jersey area at 12 percent.

12. Eighty-one percent of the survey respondents indicated that they would use a new or improved service. Of this total, 60 percent said they would use a new service if it were less expensive and offered better service.

Approximately 25 percent felt cost was a determining feature, while 15 percent would use a better service, regardless of cost.

13. Between 1991 and 1998 transborder air trips between New Brunswick and the United States are projected to grow annually at 5.6 percent. Between 1991 and the year 2003, the annual growth rate is projected at 5.0 percent. The total annual transborder air trips can be expected to nearly double by the year 2003.

14. The existing transborder service analysis undertaken found that the vast majority of New Brunswick - U.S. city pairs are presently best served through Montreal or Toronto routings. For the most part, Fredericton currently experiences good outbound transborder service with only a single stop in either Montreal or Toronto. Inbound service from the U.S., however, is often plagued with long delays at the connecting airport. There is poor service between Fredericton and Boston.

15. Saint John is the only community with direct service to Boston. Passengers from Saint John flying over Montreal or Toronto often must stop in Fredericton as well.

16. Transborder service from Moncton is generally similar to that existing in Fredericton. Poor service currently exists from Moncton to Boston.

17. Northern New Brunswick airports presently have transborder service over Montreal and Toronto. There are no convenient connections to Saint John for service to Boston.

18. The best opportunity for improving transborder air service relates to trips generated by Moncton and Fredericton. Northern New Brunswick airports generate less than 1,000 transborder air trips annually and to divert these trips to a new or improved air service would require better and more connections to the southern airports.

19. The fare analysis found that many of the existing fare differentials between air service originating in New Brunswick versus that beginning at a Maine or Boston airport are generally insufficient to support a service from New

Brunswick to the New England point. The business and regular economy fare classes presented the fewest opportunities for a cost competitive service, however, the deep discount fare class in many cases offered at least some opportunity to be cost competitive. In general, the opportunities to provide cost competitive transborder service to New England, without taking under consideration service improvements, are limited.

20. In 1988 and 1989, fresh lobster and salmon accounted for almost 50 percent (by value) of all exports sent to the United States by air. However, these two products shipped by air represent only 7.3 percent of the total (by value) lobster and fresh salmon shipped to the United States. The vast majority is shipped by truck.

21. Maine and Massachusetts together receive almost 50 percent of the salmon and lobster export from New Brunswick, and the majority of this is by truck. It would be difficult to divert these products from the road to air, because of the distance and existing trucking services.

22. Products imported by air from throughout the United States are varied in composition and place of origin. Targeting any specific market as a cargo backhaul for any proposed air service would be difficult, given the diversity of imports currently moving into New Brunswick by air from the various origins.

23. Nine of New Brunswick's largest shippers of fresh salmon or lobster were surveyed to identify potential cargo movements available for a new or improved air passenger service to New England. Boston is by far the most common U.S. destination for these time sensitive seafood products.

24. The consensus among the shippers surveyed is that it is not economical to ship seafood products by air to any destination inside a 24-hour truck service. In fact, most will truck as far west as Toronto and south to New York.

25. Two of the eight shippers surveyed indicated an interest in air service. One noted air service was only used for shipments which were required for

destinations beyond a single day's drive. Another indicated they would use air to ship 227,275 kg of live lobster to Boston annually.

26. Canada Post is the single largest customer of air cargo service within the Atlantic Region. All transborder mail from Prince Edward Island and New Brunswick is trucked to Saint John for sorting and then either trucked or flown to the United States. Transborder mail destined to northern or eastern Maine is sent from Saint John by truck. The remainder is sent by air to Boston.

27. From Canada Post's perspective the only improvements that could be made to transborder services would be either increased frequency between Saint John and Boston or the use of larger aircraft to increase capacity.

28. Air express is in competition with the trucking industry which can reach many New England markets almost as quickly as the scheduled air carriers. In addition, airlines are in competition with such major carriers as United Parcel Service and Federal Express which have custom officials located in their own distribution facilities. The clearance of air express packages from New Brunswick to New England is done at the U.S. airport, necessitating the customer to pick up the parcel in person.

29. It was found that a customs clearance fee of $80 to $100 per shipment is charged for cargo moving by air into the United States, while a fee of approximately $40 is charged for an entire truckload shipment. This differential greatly inhibits the movement of cargo by air as the cost is distributed over much smaller shipment sizes than truck.

30. After review of potential air cargo sources, it is estimated that the revenue that might be realized from a new or improved service to New England would fall within the 1 to 4 percent range of total passenger revenue.

31. The recent implementation of the GST and the new ATT has had the combined effect of increasing outbound air fares for transborder services by approximately 5.5 to 7 percent, while tickets purchased for transborder service originating from the U.S. will not be affected. It is not expected there will be any significant reduction in air passenger levels, given the

potential for reduced costs to the airlines through savings on such items as fuel and equipment derived from the GST.

It is not expected that significant numbers of passengers will drive to Maine to access air service for other Canadian destinations to offset the impacts of GST. The surface cost of doing so is offset by most potential ticket price savings.

32. Transport Canada's Cost Recovery Policy as proposed will increase air ticket costs by $0.14 to $1.20 per passenger, depending on the specific New Brunswick airport and the type of aircraft used. However, Transport Canada's policy assumes an initial cost recovery target of $40 million, which represents only 11 percent of full cost recovery. Some industry representatives believe cost recovery could result in price increases of as much as 20.3 percent if full recovery is implemented. There has been no indication as to the level of cost recovery that Transport Canada will eventually seek.

33. The prospect of a new bilateral agreement between Canada and the United States is unlikely to provide increased opportunity for direct transborder services for New Brunswick. A more likely scenario derived from the implementation of an "open skies" policy would result in improved transborder services at Halifax, Montreal, Toronto and possibly Ottawa, which would indirectly afford better transportation service to New Brunswick.

34. An indication of the level of usage of Presque Isle, Bangor and Portland Airports by New Brunswickers was attempted through discussions with U.S. carriers. Approximately 10 to 13 New Brunswick originating passengers per day are utilizing the Presque Isle Airport. Generally these passengers are associated with the Edmundston to Centreville catchment area.

Both Delta and Continental's representatives in Bangor were unable to offer an estimate of the quantity of passengers they handle originating from New Brunswick.

35. Portland Airport periodically conducts license plate surveys of their parking lot. After reviewing the survey data, it is estimated approximately 210 annual trips from Portland Airport are made by New Brunswickers.

36. The Chamber of Commerce survey indicated that respondents made 120 trips originating from a U.S. airport. Bangor was the most popular gateway with 72 percent of the trips, followed by Presque Isle at 16 percent, Boston at 10 percent and Portland at 2 percent.

37. During the course of this study, 9 New Brunswick travel agents and 4 Maine travel agents were interviewed as a means of estimating travel characteristics of New Brunswickers originating from a U.S. airport. Travel agents interviewed in Moncton, Saint John and Fredericton indicated they sold from 100 to 430 air tickets annually, representing less than 8 percent of their overall business. The four Maine travel agents interviewed indicated they sold a combined total of approximately 480 tickets to New Brunswick residents for travel from Maine airports.

38. It was constantly found that between 81 and 88 percent of all tickets sold for a U.S. origin fell into either the H-class (second level discount) or V-class (deep level discount). A further 9 to 11 percent bought B-class (first level discount). The remaining 1 to 4 percent were found to use Business or Regular Economy class fares.

39. Edmundston travellers rely almost exclusively on Presque Isle airport when originating from the United States, while passengers from either Fredericton or Moncton usually use Bangor. It was found, however, that 41 percent of those from Moncton were travelling to Boston for air service.

40. Trips to either Florida or "sun destinations" in the southern states consistently accounted for 61 to 69 percent of all trips originating from a U.S. airport. The remaining destinations were scattered throughout the U.S. showing no other popular destination.

41. In 1986 the University of New Brunswick's Transportation Group conducted a province-wide survey of households on behalf of Air Atlantic. In all, over 1,975 households were surveyed.

42. The expanded survey results estimated that nearly 3,200 person-trips were made annually from New Brunswick (not including border communities such as Woodstock and St. Stephen) to a New England airport. It was found that Bangor was the most common gateway attracting almost half of those driving from New Brunswick. Presque Isle was found to be the most popular New England gateway for those originating from the Edmundston area (92.4 percent).

43. It was found that the vast majority of those driving to a U.S. airport from New Brunswick are buying second and deep level discount tickets. Given the nature of these trips, it would be essential that a new or improved transborder air service compete on a cost basis, if some of these trips are to be diverted from the surface.

44. A study entitled *U.S. Pleasure Travel Market, Canadian Potential*, which conducted almost 9,000 in-home personal interviews in the United States, determined that the features such as: beautiful scenery, lots to see and do, well-known and popular landmarks, and interesting cities and towns are important attributes for general touring travellers visiting an area.

45. The high potential travellers that would tour Canada were identified to likely be retired or older, college educated and from urban areas. Their interests were found to be somewhat different than the general touring population, and included dining at a variety of restaurants, cultural activities, visiting small towns and villages, strolling about, being by the ocean and shopping. All these activities can be offered in New Brunswick.

46. Tauck Tours offer two different tour plans to the Atlantic Provinces. One involves a New England - Nova Scotia bus tour which utilizes the Portland - Yarmouth ferry for accessing Nova Scotia, then returns to New England via New Brunswick.

The other tour offered is a fly-charter operation which originates in Newark and flies three bus loads of passengers into Hal x at a time to either take a tour of Nova Scotia or a New Brunswick - Prince Edward Island bus tour. This service is operated once weekly from June through October and typically accommodates upwards of 1,300 passengers per season.

47. **Tour Brokers International** are planning to offer 15 tours during the 1991 season. One tour package will involve a 12 day plan originating from Toronto and utilizing rail service to Saint John, followed by a bus tour of the Maritime Provinces. The other tour package is a 12 day fly-drive plan which originates from various points in the U.S. and flies to Bangor. From Bangor, a bus is chartered to tour various Maritime attractions.

The tour operator would prefer to fly into New Brunswick, if a cost competitive charter rate could be negotiated.

48. Previous experience has shown that any transborder service to Boston must offer on the route an aircraft such as the deHavilland DASH 8 as a minimum size and comfort level.

49. There appears to be three possible alternatives to improving transborder passenger air service out of New Brunswick. The first such possibility is improving the existing service by feeding Moncton, Fredericton and northern New Brunswick traffic into Saint John to take advantage of the Saint John - Boston two return flights per day service. The second possibility is to evaluate the alternative of a co-terminal service from Moncton to Fredericton to Boston. This routing would generate a maximum of 11 trips per flight on a two return flights per day service. The third alternative would be to evaluate a co-terminal service which would provide one return flight per day. This type of service would generate a maximum of 13 passengers per flight. Both these estimates do not include the diversion of existing surface trips. Northern New Brunswick potential transborder volumes are less than one per day.

50. The possibility of tying the northern New Brunswick airports, namely Bathurst, Chatham and Charlo, into the existing Saint John to Boston service was evaluated. It was found that the present service providing air travel to the northern airports does not permit convenient access to the existing New Brunswick transborder service.

51. The rescheduling and rerouting of Air Atlantic's existing flight itineraries are best approached by the airline themselves, given the complexities which are involved when adjusting schedules. Furthermore, the many ramifications of

rescheduling an aircraft such as crew scheduling, maintenance, and expansion objectives are best dealt with by the airline. However, this study has shown that there is an excellent opportunity for the regional carrier to reschedule and coordinate its schedules to enhance the Saint John - Boston service by tying other regional services from Fredericton and Moncton into Saint John. When establishing or restructuring new northern New Brunswick routes to the southern airports, consideration should be given to tying into the transborder service.

52. To estimate the economic benefits which would be derived from the implementation of a new transborder air service, an evaluation was completed on a co-terminal service originating in Moncton, stopping in Fredericton and them continuing to Boston. Inbound services would be the same itinerary in reverse. Two separate service levels were evaluated, two return flights per day, and one return flight per day.

53. Given a load factor of 11 passengers per flight, 2 return flights per day and a competitive fare, the co-terminal service can be expected to lose $1.415 million annually. The deficit results from total annual allocated costs of $3.377 million being offset by $1.962 million in total revenue.

With the average growth rates for transborder air service from the Maritimes to the United States at approximately 5 percent, it would be another 14 years before volumes will reach breakeven levels.

54. Based on one return flight per day, 13 passengers per flight and a competitive fare, a co-terminal service involving Moncton - Fredericton and Boston can be expected to lose $.752 million during its first year of operation. The deficit results from total annual allocated costs of $1.912 million being offset by $1.159 million in total revenue.

Breakeven passenger loads could be expected in approximately 12 years.

55. The economic benefits to New Brunswick of having a new air service connecting Moncton and Fredericton to Boston are the sum of direct and indirect revenues and employment income generated by the service. Direct benefits of the service would be from revenues received by the airline from

passenger tickets and freight charges, by the airports from aircraft landing and general terminal fees and auto parking fees, as well as by various commercial operations including airport concessions, car rental agencies, travel agencies, accommodations and restaurant facilities. In addition, direct benefits are derived from the employment income received by the aircraft crew.

The indirect benefits to New Brunswick are those multiplier or "spin-off" benefits, which result from the direct expenditures and employment income created by the prospective service. For instance, the income earned by the aircraft crew would be in part spent on various goods and services, providing a marginal increase in business activity and so on.

Other benefits available to the Provincial and Federal Governments are the new revenues from the various taxes applied to the direct revenues and incomes. The taxes include the Air Transportation Tax (ATT), Goods and Services Tax (GST), Provincial Sales Tax (PST), Federal Income Tax (FIT) and Provincial Income Tax (PIT).

56. With a co-terminal service involving two return flights per day, the total net economic benefit to the Province is $2.095 million annually, comprised of $1.188 million in direct benefits and $0.907 in indirect benefits. This compares with a net annual operating loss of $1.415 million.

57. The net economic benefit generated by a co-terminal service providing one return flight per day is projected to be $1.279 million annually, which compares with an annual operating loss of $.725 million. Net direct benefits are estimated at $.726 million while net indirect benefits would be $.553 million.

58. There are some limited potential induced industrial benefits which could result from improved transborder air service. These include the fly-drive tourism business, aquaculture and fisheries fresh product delivery and same-day courier services.

4.0 RECOMMENDATIONS

1. The potential to ship 227,275 kg of fresh lobster to Boston annually by air should be investigated by a regional carrier. Westmorland Fisheries have indicated a desire to use an air service to move this product.

2. Attempts should be directed at reducing the custom clearance fees for air shipments made by scheduled passenger service. This would permit air service to more effectively generate revenue as a supplement to scheduled passenger service.

3. Efforts at promoting a fly-drive New Brunswick tour package should be directed at penetrating the large U.S. urban markets such as Boston, Hartford and New York, while targeting the retired or older population. Emphasis should be placed on promoting New Brunswick as a place with many cultural activities, unique villages, varied dining, seashores and shopping.

4. Discussions should be held with Tauck Tours to determine the possibility of using Moncton as a gateway for their fly-drive tour of New Brunswick - Prince Edward Island. Presently, this service is offered through Halifax.

5. A regional carrier should investigate the possibility of offering a fly-charter service from Bangor to New Brunswick to Tour Brokers International. This service could be offered at off-peak scheduled service times.

6. Air Atlantic should consider restructuring and adjusting its scheduled flight itineraries so that the Boston - Saint John service could be accessed by those originating from, or destined to, Fredericton. This readjustment could divert upwards of four passengers per flight from existing routings over Montreal and Toronto.

7. Air Atlantic should consider a restructuring of its Halifax - Saint John - Boston route to include Moncton as an intermediate stop between Halifax and Saint John. This would provide the feeder service necessary for better transborder service from Moncton and could potentially direct upwards of 7 passengers per flight from routings over Montreal, Toronto or Halifax.

8. If route restructuring and flight rescheduling is not possible to improve transborder air service for Moncton and Fredericton, the Province should approach a regional carrier to discuss the possibility of establishing a co-terminal service involving Moncton, Fredericton and Boston.